User Manual

C@K+NLT

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GIrcjĘ GAF6+K Afgnqcr

Version March 201/

FCC Statement

THIS DEVICE COMPLIES WITH PART 15 FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS:

(1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE.

(2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

THIS EQUIPMENT HAS BEEN TESTED AND FOUND TO COMPLY WITH THE LIMITS FOR A CLASS "A" DIGITAL DEVICE, PURSUANT TO PART 15 OF THE FCC RULES. THESE LIMITS ARE DESIGNED TO PROVIDE REASONABLE PROTECTION AGAINST HARMFUL INTERFERENCE WHEN THE EQUIPMENT IS OPERATED IN A COMMERCIAL ENVIRONMENT. THIS EQUIPMENT GENERATES, USES, AND CAN RADIATE RADIO FREQUENCY ENERGY AND, IF NOT INSTALLED AND USED IN ACCORDANCE WITH THE INSTRUCTION MANUAL, MAY CAUSE HARMFUL INTERFERENCE TO RADIO COMMUNICATIONS.

OPERATION OF THIS EQUIPMENT IN A RESIDENTIAL AREA IS LIKELY TO CAUSE HARMFUL INTERFERENCE IN WHICH CASE THE USER WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT HIS OWN EXPENSE.

Notice

This guide is designed for experienced users to setup the system within the shortest time. For detailed information, please always refer to the electronic user's manual.

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This warranty does not apply to any products which have been repaired or altered by persons other than repair personnel authorized by Avalue, or which have been subject to misuse, abuse, accident or improper installation. Avalue assumes no liability under the terms of this warranty as a consequence of such events. Because of Avalue's high quality-control standards and rigorous testing, most of our customers never need to use our repair service. If any of Avalue's products is defective, it will be repaired or replaced at no charge during the warranty period. For out-of-warranty repairs, you will be billed according to the cost of replacement materials, service time, and freight. Please consult your dealer for more details. If you think you have a defective product, follow these steps:

1. Collect all the information about the problem encountered. (For example, CPU type and speed, Avalue's products model name, hardware & BIOS revision number, other hardware and software used, etc.) Note anything abnormal and list any on-screen messages you get when the problem occurs.
2. Call your dealer and describe the problem. Please have your manual, product, and any helpful information available.
3. If your product is diagnosed as defective, obtain an RMA (return material authorization) number from your dealer. This allows us to process your good return more quickly.
4. Carefully pack the defective product, a complete Repair and Replacement Order Card and a photocopy proof of purchase date (such as your sales receipt) in a shippable container. A product returned without proof of the purchase date is not eligible for warranty service.
5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

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1. Getting Started

1.1 Safety Precautions

Warning!

Always completely disconnect the power cord from your chassis whenever you work with the hardware. Do not make connections while the power is on. Sensitive electronic components can be damaged by sudden power surges. Only experienced electronics personnel should open the PC chassis.

Caution!

Always ground yourself to remove any static charge before touching the CPU card. Modern electronic devices are very sensitive to static electric charges. As a safety precaution, use a grounding wrist strap at all times. Place all electronic components in a static-dissipative surface or static-shielded bag when they are not in the chassis.

1.2 Packing List

Before you begin installing your single board, please make sure that the following materials have been shipped:

- 1 x EBM-PNV with Intel® Atom™ Dual Core & DDR SDRAM Mini Module
- 1 x DVD-ROM or CD-ROM contains the followings:
  - User's Manual (this manual in PDF file)
  - Ethernet driver and utilities
  - VGA drivers and utilities
  - Audio drivers and utilities

If any of the above items is damaged or missing, contact your retailer.

1.3 Document Amendment History

Revision	Date	Comment
1st	August 2010	Initial Release

1.4 Manual Objectives

This manual describes in detail the Avalue Technology EBM-PNV Single Board.

We have tried to include as much information as possible but we have not duplicated information that is provided in the standard IBM Technical References, unless it proved to be necessary to aid in the understanding of this board.

We strongly recommend that you study this manual carefully before attempting to interface with EBM-PN series or change the standard configurations. Whilst all the necessary information is available in this manual we would recommend that unless you are confident, you contact your supplier for guidance.

Please be aware that it is possible to create configurations within the CMOS RAM that make booting impossible. If this should happen, clear the CMOS settings, (see the description of the Jumper Settings for details).

If you have any suggestions or find any errors concerning this manual and want to inform us of these, please contact our Customer Service department with the relevant details.

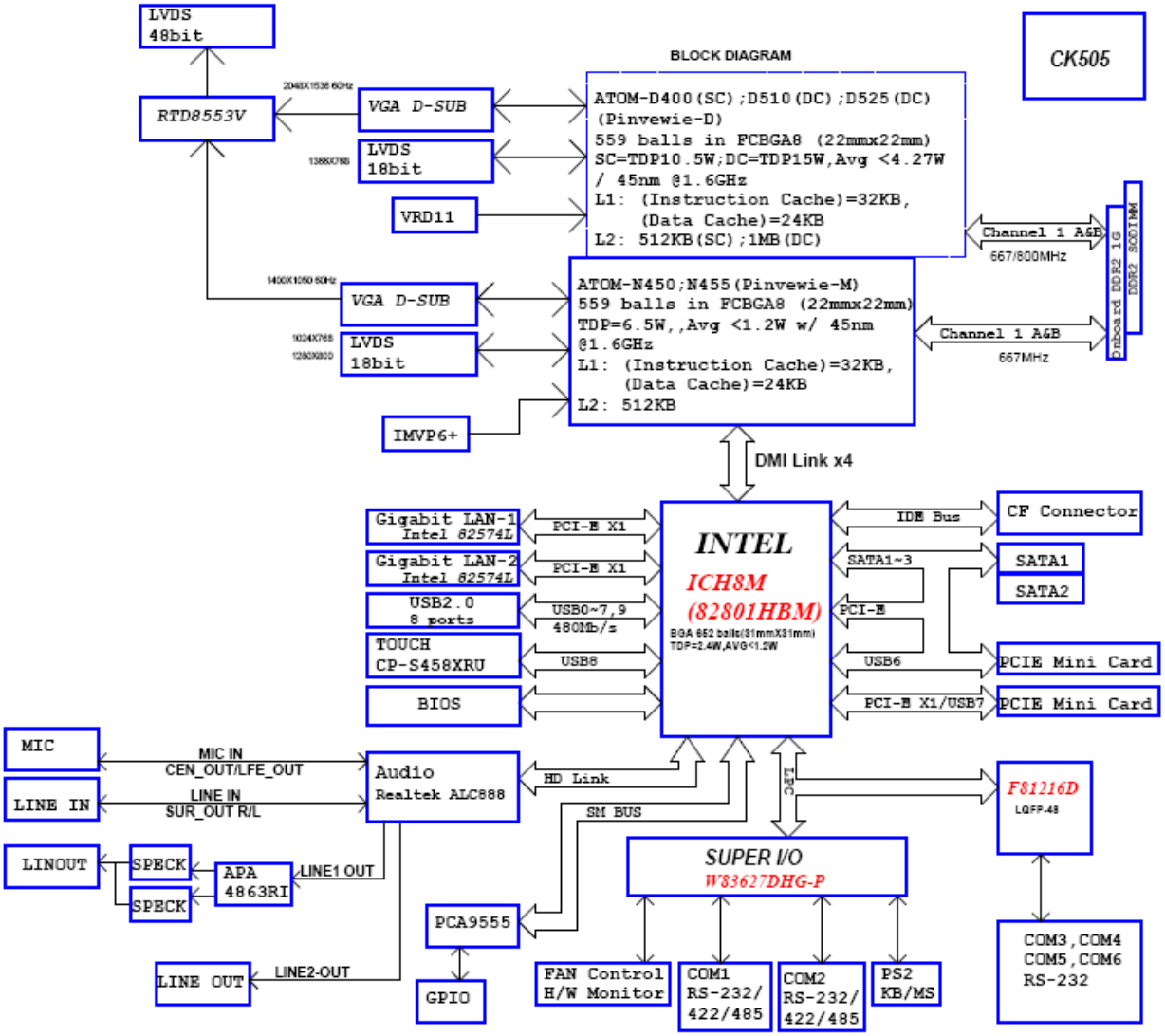
1.5 System Specifications

System	
CPU	Onboard Intel® Atom™ Dual-Core D525 1.8 GHz CPU
FSB	667/800MHz
BIOS	AMI 8Mbit Flash BIOS
System Chipset	Intel® ICH8-M Chipset (2.4W)
I/O Chip	Winbond W83627DHG
System Memory	Onboard 1GB up to 2GB & one 204-pin DDR3 SODIMM supports up to 2GB DDR3 800 SDRAM.
SSD	One CompactFlash Type I/II Socket
Watchdog Timer	Reset: 1 ~ 255min. and 1sec. or 1min./step
H/W Status Monitor	Monitoring System Temperature, Voltage, and Cooling Fan Status. Auto Trotting Control when CPU Overheats
Expansion	Two Mini PCIe Slot (One Support Mini Card DOM)
I/O	
MIO	2 x SATA, 1 LPT (Option), 2 x RS-232/422/485, 4 x RS-232 (Option), 1 x K/B & Mouse (Option)
USB	6 x USB 2.0
DIO	16-bit General Purpose I/O for DI and DO 8-bit Parallel Port Data
Display	
Chipset	Intel® Pineview™ Integrated, Gen3.5 + GFX Core @ 400MHz Intel® Pineview Integrated, Gen3.5 + GFX Core @ 200MHz
Resolution	CRT Mode : Up to 2048 x 1536 @ 60Hz CRT Mode : Up to 1400 x 1050 @ 60Hz LCD/ Simultaneous Mode: Up to 1366 x 768 @ 75Hz LCD/ Simultaneous Mode: Up to 1280 x 800 @ 75Hz
Multiple Display	CRT + LVDS, LVDS + LVDS
LVDS	1 x 18-bit, 2 x 18/24-bit LVDS
Backlight Control	VR, PWM (Setting by BIOS)
Touch Screen Interface (Optional)	
Chipset	ETP-CP-S458XRU
Touch Screen Interface	With 5-pin 2.54mm Pin Header (Can be Selected to Support 4/5-wire Touch Screen)

Audio	
AC97 Codec	Realtek ALC888 Supports 5.1-CH Audio
Audio Interface	Mic-in, Line-in, Line-out
Audio Amplifier	2 x 2W
Ethernet	
LAN 1	Intel® 82574L PCI-E Gigabit Ethernet
LAN 2	Intel® 82574L PCI-E Gigabit Ethernet (Optional 1 x PS/2 Keyboard & Mouse)
Ethernet Interface	1000 Base-Tx Gigabit Ethernet Compatible
Mechanical & Environmental	
Power Consumption	+12V @ 1.80A
Power Type	+12V ~ +28V Power Input AT/Adapter
Operation Temperature	0 ~ 60°C (32 ~ 140°F)
Operating Humidity	0% ~ 90% Relative Humidity, Non-condensing
Size (L x W)	8" x 5.75" x 0.75" (203mm x 146mm x 19mm)
Weight	0.55lb (0.25kg)

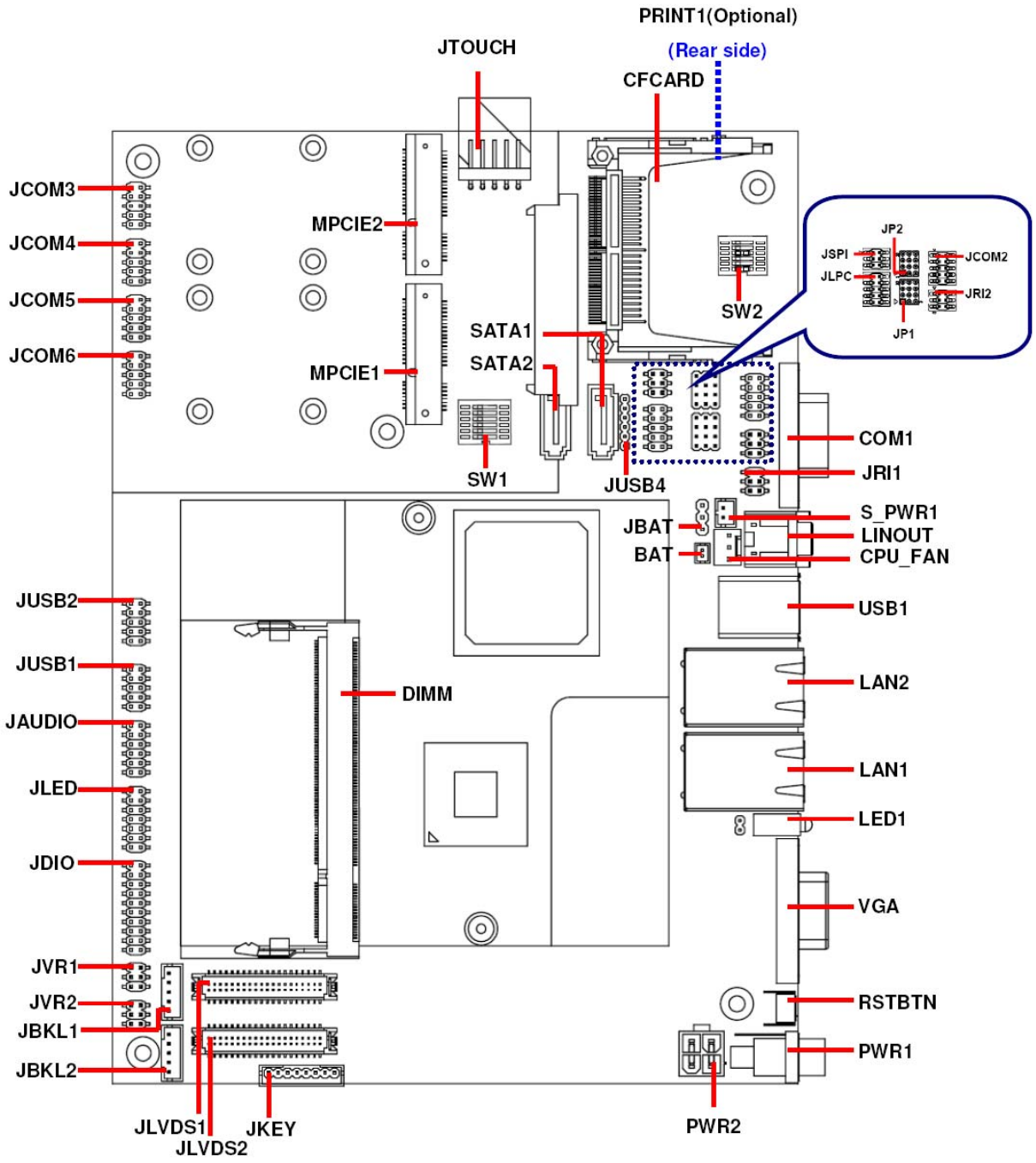
1.6 Architecture Overview – Block Diagram

The following block diagram shows the architecture and main components of EBM-PNV.



2. Hardware Configuration

2.1 Product Overview



2.2 Installation Procedure

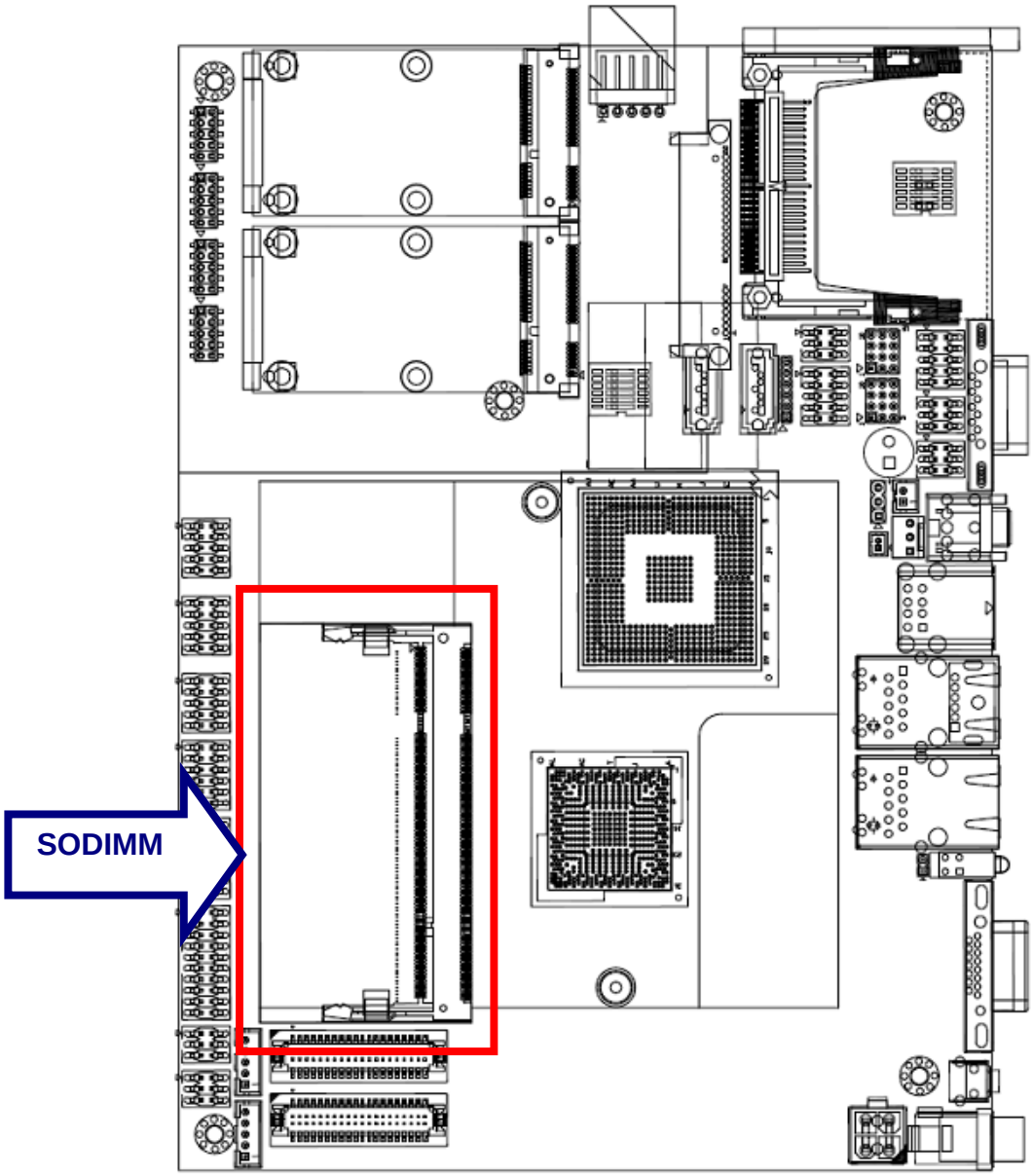
This chapter explains you the instructions of how to setup your system.

1. Turn off the power supply.
2. Insert the SODIMM module (be careful with the orientation).
3. Insert all external cables for hard disk, floppy, keyboard, mouse, USB etc. except for flat panel. A CRT monitor must be connected in order to change CMOS settings to support flat panel.
4. Connect power supply to the board via the ATXPWR.
5. Turn on the power.
6. nter the BIOS setup by pressing the delete key during boot up. Use the "LOAD BIOS DEFAULTS" feature. The ***Integrated Peripheral Setup*** and the ***Standard CMOS Setup*** Window must be entered and configured correctly to match the particular system configuration.
7. If TFT panel display is to be utilized, make sure the panel voltage is correctly set before connecting the display cable and turning on the power.

Note: Make sure the heat sink and the CPU top surface are in total contact to avoid CPU overheating problem that would cause the system to hang or unstable

2.2.1 Main Memory

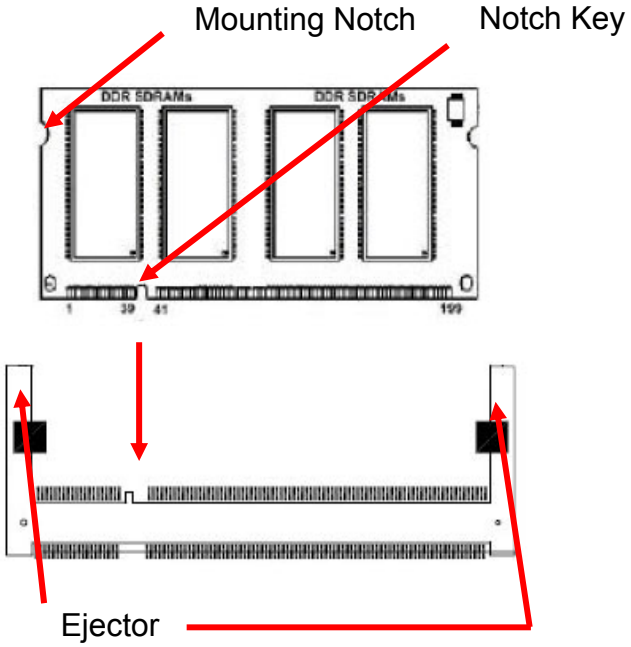
EBM-PNV provides one 200-pin SODIMM socket support up to DDR2 SDRAM and onboard 1GB DDR2 667 SDRAM. The total maximum memory size is 3GB.



Make sure to unplug the power supply before adding or removing SODIMMs or other system components. Failure to do so may cause severe damage to both the board and the components.

- Locate the SODIMM socket on the board.
- Hold two edges of the SODIMM module carefully. Keep away of touching its connectors.

- Align the notch key on the module with the rib on the slot.
- Firmly press the modules into the socket automatically snaps into the mounting notch. Do not force the SODIMM module in with extra force as the SODIMM module only fit in one direction.



200-pin DDR2 SODIMM

- To remove the SODIMM modules, push the two ejector tabs on the slot outward simultaneously, and then pull out the SODIMM module.

Note:

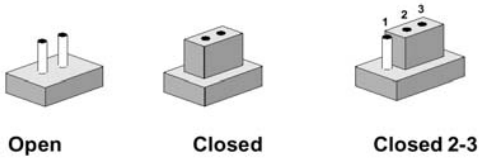
(1) Please do not change any DDR2 SDRAM parameter in BIOS setup to increase your system's performance without acquiring technical information in advance.

(2) Static electricity can damage the electronic components of the computer or optional boards. Before starting these procedures, ensure that you are discharged of static electricity by touching a grounded metal object briefly.

2.3 Jumper and Connector List

You can configure your board to match the needs of your application by setting jumpers. A jumper is the simplest kind of electric switch.

It consists of two metal pins and a small metal clip (often protected by a plastic cover) that slides over the pins to connect them. To “close” a jumper you connect the pins with the clip. To “open” a jumper you remove the clip. Sometimes a jumper will have three pins, labeled 1, 2, and 3. In this case, you would connect either two pins.



The jumper settings are schematically depicted in this manual as follows:

A pair of needle-nose pliers may be helpful when working with jumpers.

Connectors on the board are linked to external devices such as hard disk drives, a keyboard, or floppy drives. In addition, the board has a number of jumpers that allow you to configure your system to suit your application.

If you have any doubts about the best hardware configuration for your application, contact your local distributor or sales representative before you make any changes.

The following tables list the function of each of the board’s jumpers and connectors.

Jumpers

Label	Function	Note
JBAT	Clear CMOS	3 x 1 header, pitch 2.54mm
JP1	Serial port 1 – RS232/ 422/ 485 mode select	4 x 3 header, pitch 2.0mm
JP2	Serial port 2 – RS232/ 422/ 485 mode select	4 x 3 header, pitch 2.0mm
JRI1	Serial port 1 pin9 signal select	3 x 2 header, pitch 2.0mm
JRI2	Serial port 2 pin9 signal select	3 x 2 header, pitch 2.0mm
JVR1	LCD backlight brightness adjustment	3 x 2 header, pitch 2.0mm
JVR2	LCD backlight brightness adjustment	3 x 2 header, pitch 2.0mm
SW1	Multi-function select	DIP switch 6pin
SW2	Serial port 1/ 2 – RS232/ 422/ 485 mode select	DIP switch 6pin

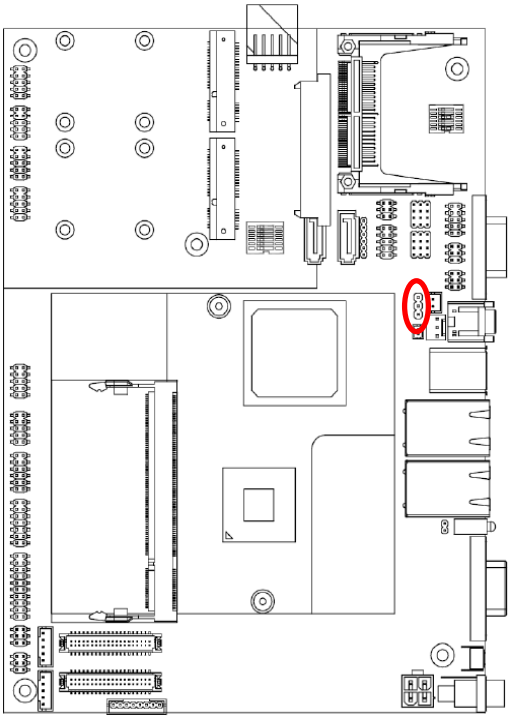
Connectors

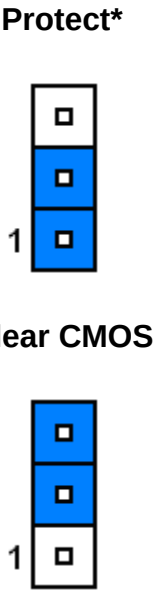
Label	Function	Note
BAT	Battery connector	2 x 1 wafer, pitch 1.25mm
CFCARD	Compact Flash card connector	
COM1	Serial Port 1 connector	D-sub 9 pin, male
CPU_FAN	CPU fan connector	3 x 1 wafer, pitch 2.54mm
DIMM	200-pin DDR2 SODIMM socket	
JAUDIO	Audio connector	6 x 2 header, pitch 2.0mm
JBKL1	LCD Inverter connector	5 x 1 wafer, pitch 2.0mm
JBKL2	LCD Inverter connector	5 x 1 wafer, pitch 2.0mm
JCOM2	Serial Port 2 connector	5 x 2 header, pitch 2.0mm
JCOM3	Serial Port 3 connector	5 x 2 header, pitch 2.0mm
JCOM4	Serial Port 4 connector	5 x 2 header, pitch 2.0mm
JCOM5	Serial Port 5 connector	5 x 2 header, pitch 2.0mm
JCOM6	Serial Port 6 connector	5 x 2 header, pitch 2.0mm
JDIO	General purpose I/O connector	10 x 2 header, pitch 2.0mm
JLED	LED indicator connector	7 x 2 header, pitch 2.0mm
JLVDS1	LVDS Connector	DIN 40-pin wafer, pitch 1.25mm
JLVDS2	LVDS Connector	DIN 40-pin wafer, pitch 1.25mm
JTOUCH	Touch panel connector	5 x 1 header, pitch 2.54mm
JUSB1	USB connector 4&5	5 x 2 header, pitch 2.0mm
JUSB2	USB connector 2&3	5 x 2 header, pitch 2.0mm
JUSB4	USB connector 9	6 x 1 header, pitch 2.0mm
JKEY	OSD for front panel key	8 x 1 wafer, pitch 2.0mm
LAN1	RJ-45 Ethernet 1	
LAN2	RJ-45 Ethernet 1	
LED	LED indicator connector	
LINOUT	Audio line-out connector	
MPCIE1	Mini-PCI connector 1	
MPCIE2	Mini-PCI connector 2	
PRINT	Optional LPT Connector	
PWR1	Power connector	
PWR2	Power connector	2 x 2 wafer, pitch 2.0mm
RSBTN	Reset button	
S_PWR1	Serial ATA power connector	2 x 1 wafer, pitch 2.0mm
SATA1	Serial ATA connector 1	

EBM-PNV		
SATA2	Serial ATA connector 2	
SATA3	Serial ATA connector 3	
USB1	USB connector 0&1	
VGA	VGA connector	D-sub 15-pin, female

2.4 Setting Jumpers & Connectors

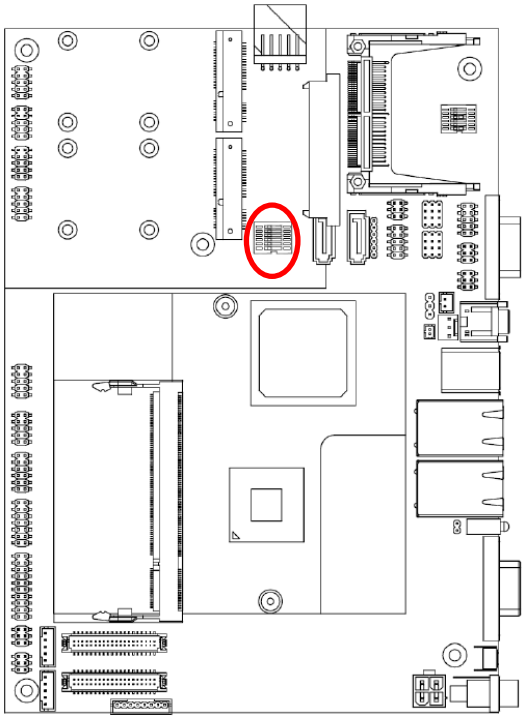
2.4.1 Clear CMOS (JBAT)

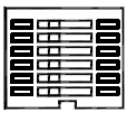




*** Default**

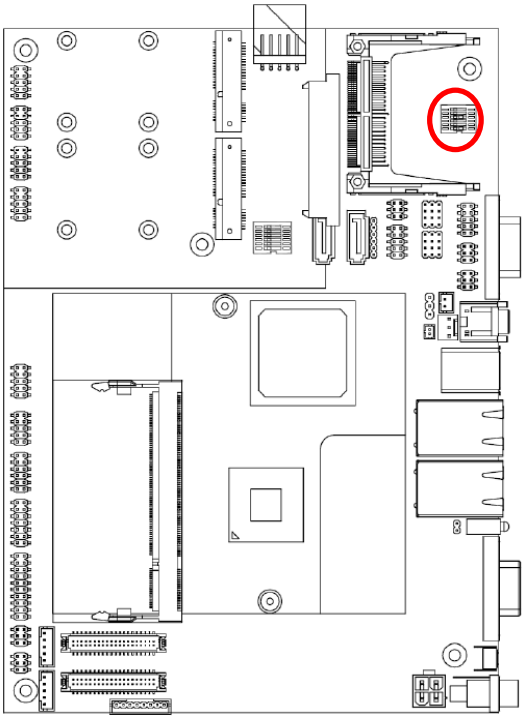
2.4.2 Multi-function select (SW1)

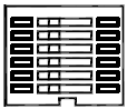




	ON	OFF
1	AT SEL	ATX SEL
2	CF Master	CF Slave
3	Touch off	Touch on
4	Touch: 4W	Touch: 5W
5	GPIO32:L	GPIO32:H
6	GPIO33:L	GPIO33:H

2.4.3 Serial port 1/ 2 - RS-232/ 422/ 485 mode select (SW2)





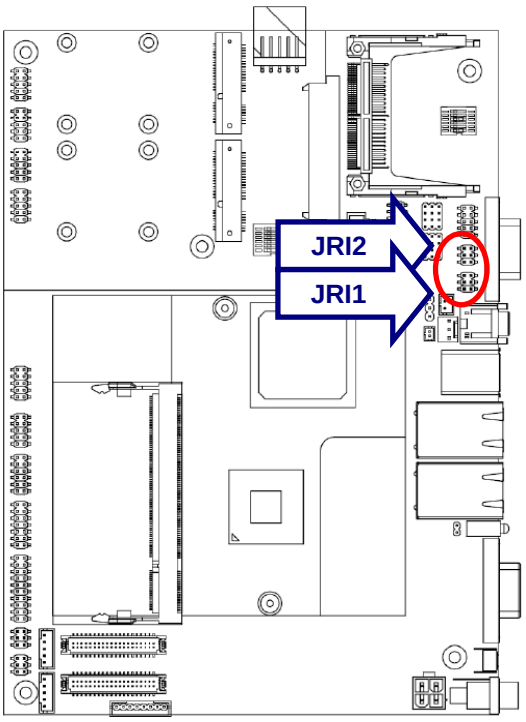
In Serial Port 1 mode

	RS-232	RS-422	RS-485
1	ON	OFF	OFF
2	OFF	ON	OFF
3	OFF	OFF	ON

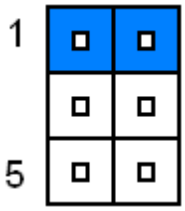
In Serial Port 2 mode

	RS-232	RS-422	RS-485
4	ON	OFF	OFF
5	OFF	ON	OFF
6	OFF	OFF	ON

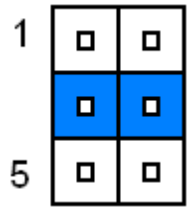
2.4.4 Serial port 1/ 2 pin9 signal select (JRI1/ JRI2)



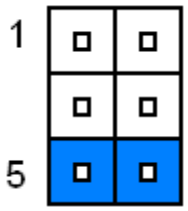
Ring*



+5V

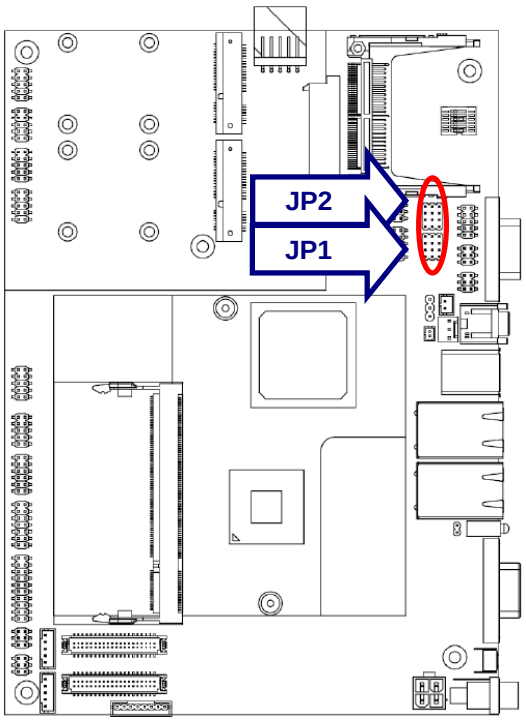


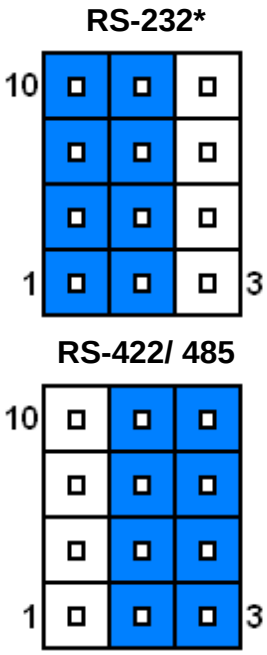
+12V



*** Default**

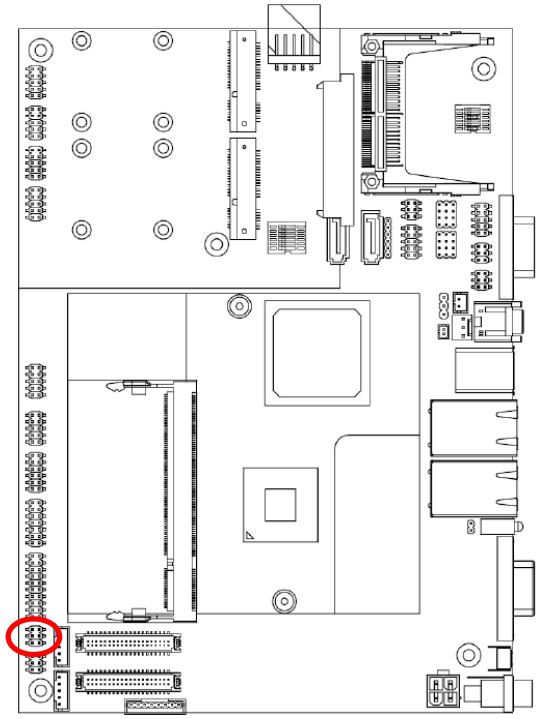
2.4.5 Serial port 1/ 2 RS-232/ 422/ 485 mode select (JP1/ JP2)





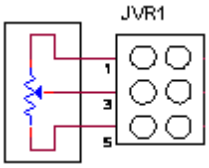
*** Default**

2.4.6 LCD backlight brightness adjustment (JVR1)



*** Default**

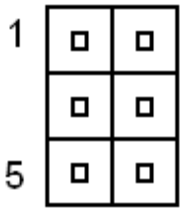
Signal	PIN	PIN	Signal
+5V	1	2	DC
VR	3	4	VR
GND	5	6	PWM



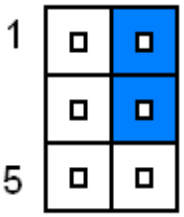
Variation Resistor

(Recommended: 4.7KΩ, >1/16W)

Mode1: VR type

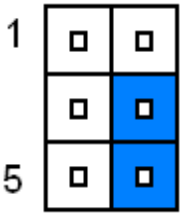


Mode 2: DC type*



Note: DC: 0V ~5V

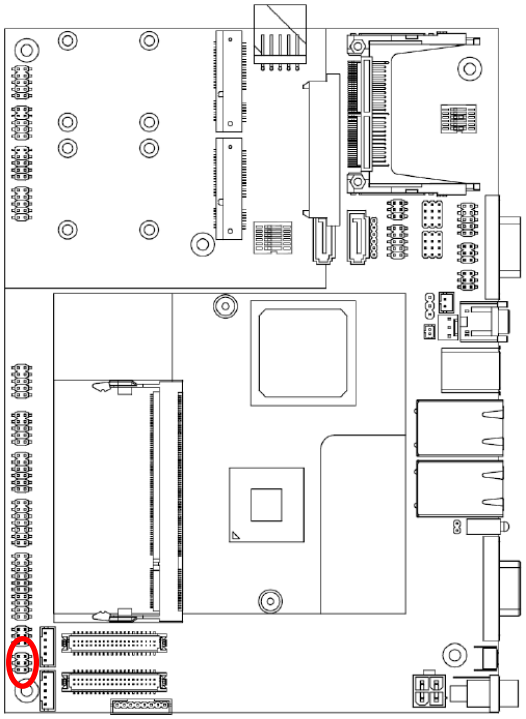
Mode 3: Pulse-Width Modulated type



Note:

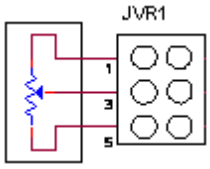
For inverters with adjustable Backlight function, it is possible to control the LCD brightness through the VR signal controlled by JBKL1. Please see the JBKL1 section for detailed circuitry information.

2.4.7 LCD backlight brightness adjustment (JVR2)



*** Default**

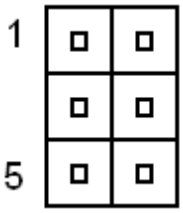
Signal	PIN	PIN	Signal
+5V	1	2	DC2
VR	3	4	VR
GND	5	6	PWM2



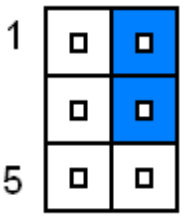
Variation Resistor

(Recommended: 4.7KΩ, >1/16W)

Mode1: VR type

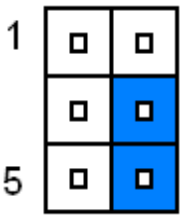


Mode 2: DC type*



Note: DC: 0V ~5V

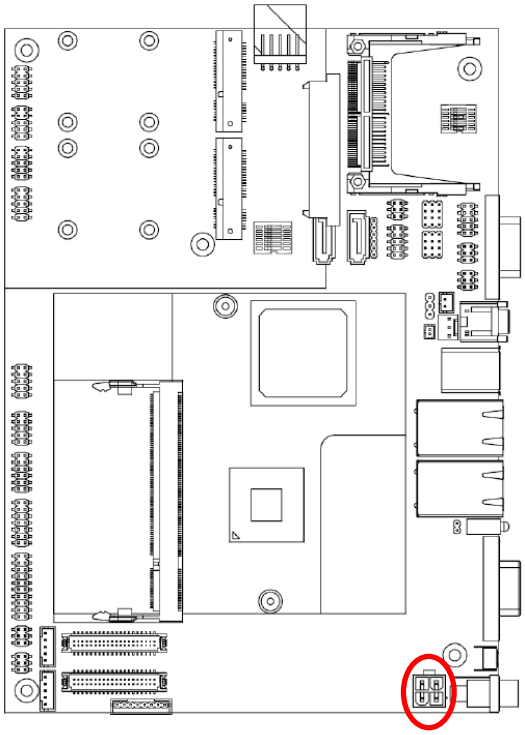
Mode 3: Pulse-Width Modulated type

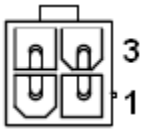


Note:

For inverters with adjustable Backlight function, it is possible to control the LCD brightness through the VR signal controlled by JBKL2. Please see the JBKL2 section for detailed circuitry information.

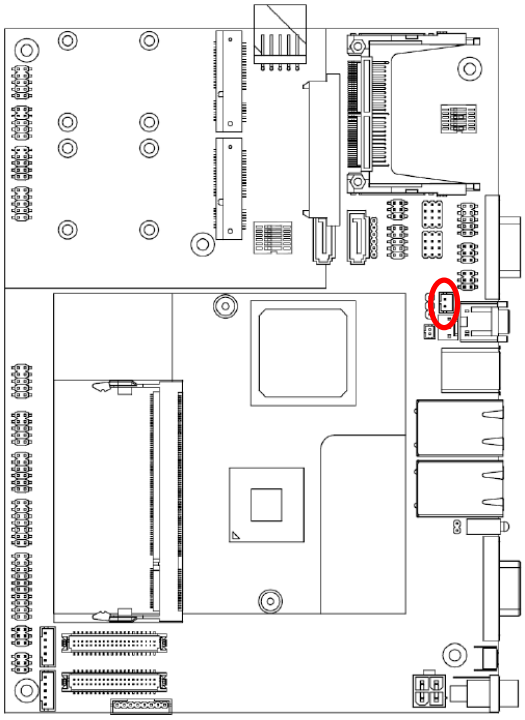
2.4.8 Power connector (PWR2)





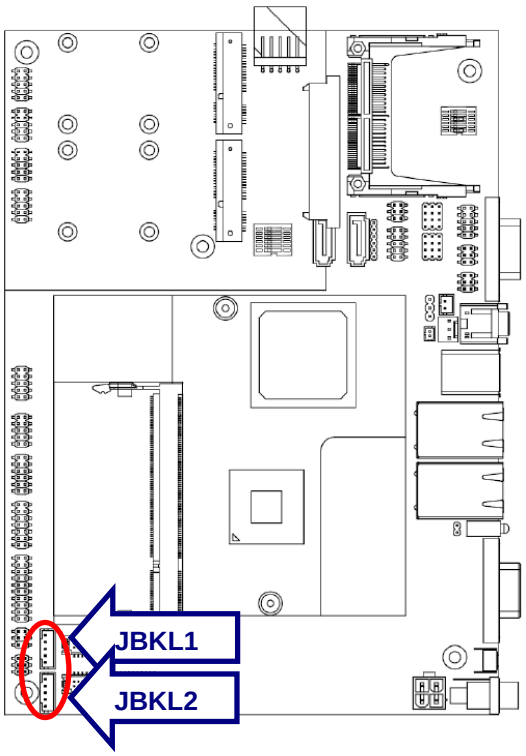
Signal	PIN	PIN	Signal
VIN	4	3	VIN
GND	2	1	GND

2.4.9 Serial ATA power connector (S_PWR1)



Signal	PIN
SATA_PWR	2
GND	1

2.4.10 LCD Inverter connector (JBKL1/ JBKL2)



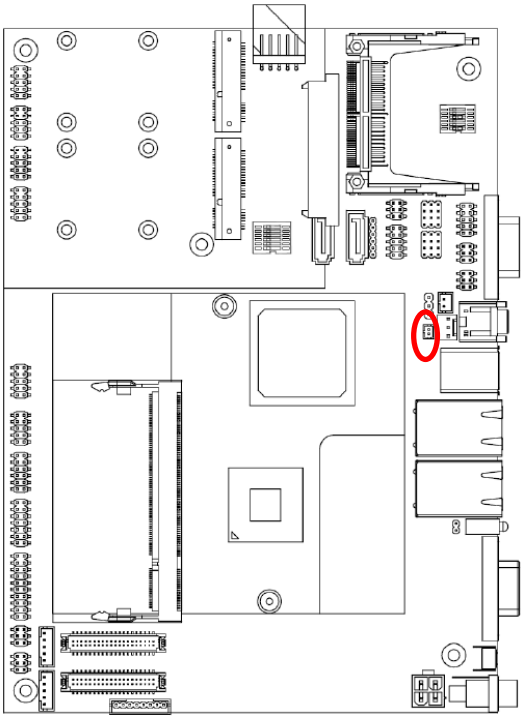
Signal	PIN
+5V	5
BRIGHT	4
BLK_ON	3
GND	2
+12V	1

Note:
For inverters with adjustable Backlight function, it is possible to control the LCD brightness through the VR signal controlled by **JVR1/ JVR2**. Please see the **JVR1/ JVR2** section for detailed circuitry information.

2.3.8.1 Signal Description – LCD Inverter Connector (JBKL1/ JBKL2)

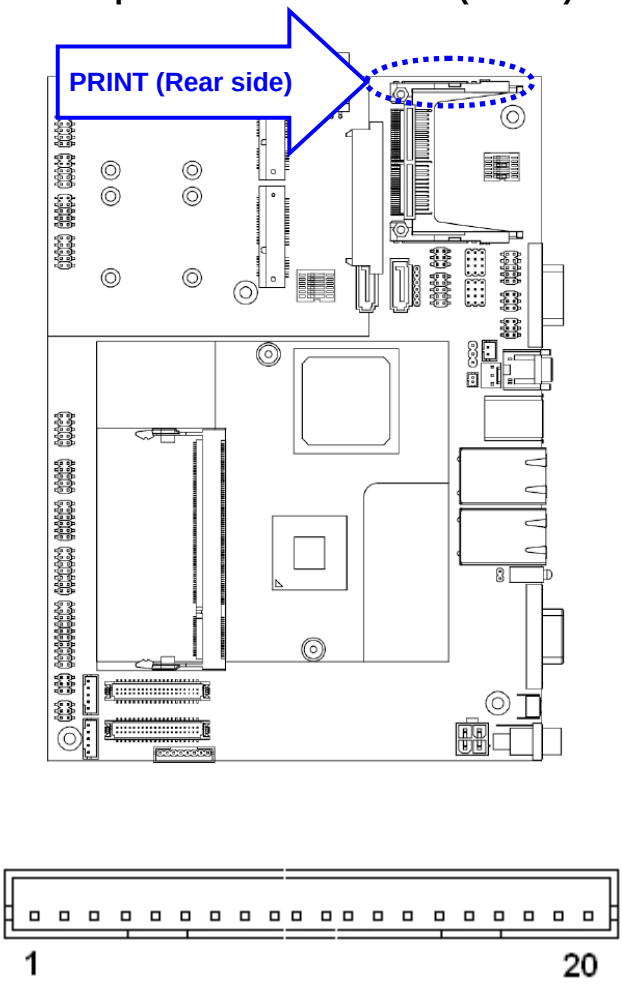
Signal	Signal Description
BRIGHT	Vadj = 0.75V ~ 4.25V (Recommended: 4.7KΩ, >1/16W)
BKL_ON	LCD backlight ON/OFF control signal

2.4.11 Battery connector (BAT)



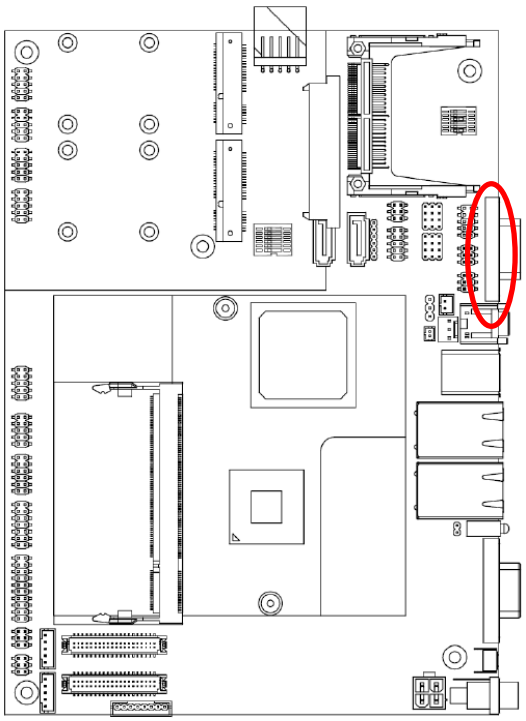
Signal	PIN
GND	2
BAT	1

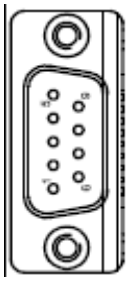
2.4.12 Optional LPT connector (PRINT)



Signal	PIN
GND	20
GND	19
GND	18
SLIN#	17
PAR_INIT#	16
ERR#	15
AFD#	14
SLCT	13
PE	12
BUSY	11
ACK#	10
PTD7	9
PTD6	8
PTD5	7
PTD4	6
PTD3	5
PTD2	4
PTD1	3
PTD0	2
STB-	1

2.4.13 Serial port 1 connector (COM1)





In RS-232 Mode

Signal	PIN	PIN	Signal
DCD1	1	2	RxD1
TxD1	3	4	DTR1
GND	5	6	DSR1
RTS1	7	8	CTS1
RI1	9		NC

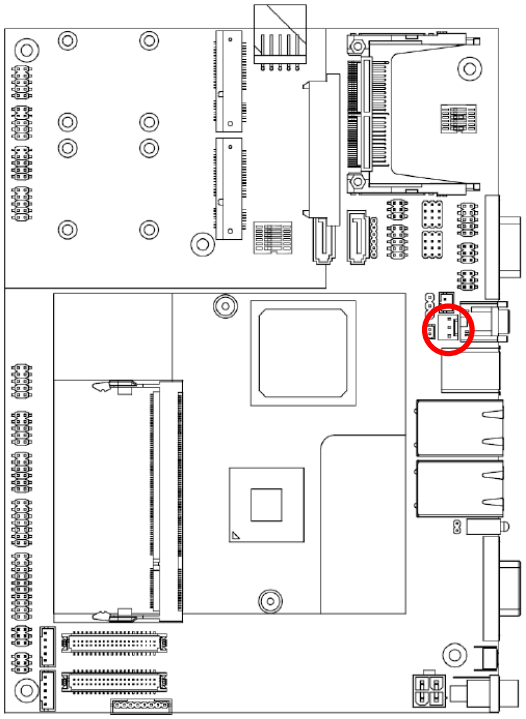
In RS-422 Mode

Signal	PIN	PIN	Signal
TxD1-	1	2	RxD1+
TxD1+	3	4	RxD1-
GND	5	6	NC
NC	7	8	NC
NC	9		NC

In RS-485 Mode

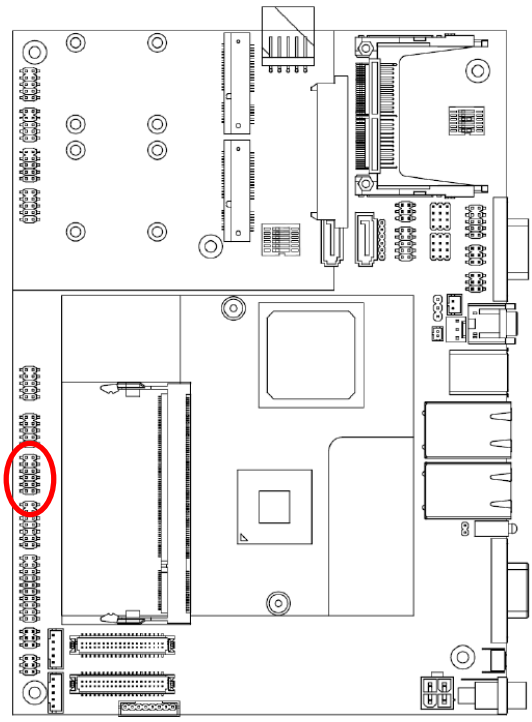
Signal	PIN	PIN	Signal
DATA1-	1	2	NC
DATA1+	3	4	NC
GND	5	6	NC
NC	7	8	NC
NC	9		NC

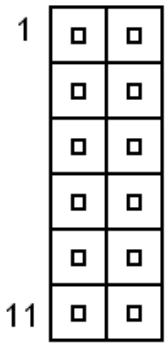
2.4.14 CPU fan connector (CPU_FAN)



Signal	PIN
FAN_TAC1	3
+12V	2
GND	1

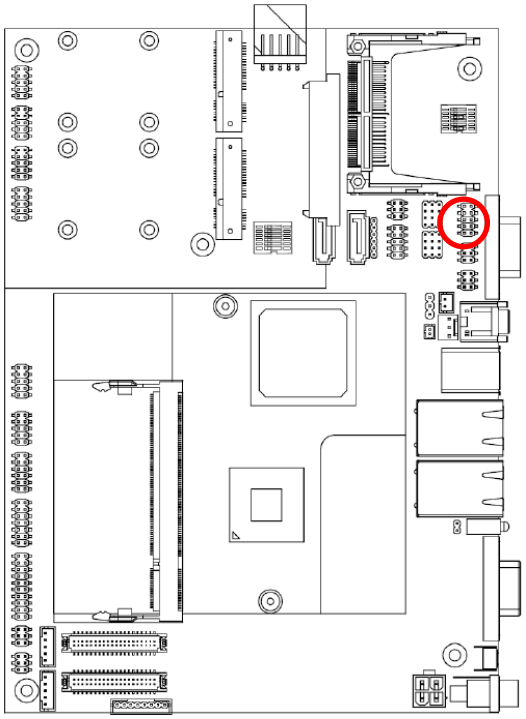
2.4.15 Audio connector (JAUDIO)

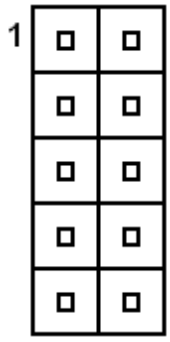




Signal	PIN	PIN	Signal
APM_LOUT_R	1	2	APM_LOUT_L
GND	3	4	GND
LINEIN_R	5	6	LINEIN_L
MIC-R	7	8	MIC-L
FRONT-JD	9	10	LINE1-JD
MIC1-JD	11	12	GND

2.4.16 Serial port 2 connector (JCOM2)





In RS-232 Mode

Signal	PIN	PIN	Signal
DCD2	1	2	RxD2
TxD2	3	4	DTR2
GND	5	6	DSR2
RTS2	7	8	CTS2
RI2	9	10	NC

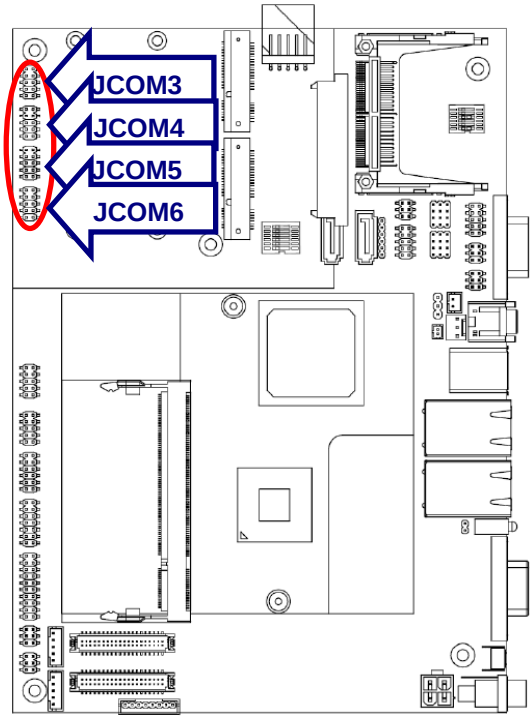
In RS-422 Mode

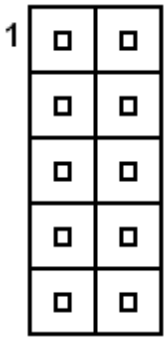
Signal	PIN	PIN	Signal
TxD2-	1	2	RxD2+
TxD2+	3	4	RxD2-
GND	5	6	NC
NC	7	8	NC
NC	9	10	NC

In RS-485 Mode

Signal	PIN	PIN	Signal
DATA2-	1	2	NC
DATA2+	3	4	NC
GND	5	6	NC
NC	7	8	NC
NC	9	10	NC

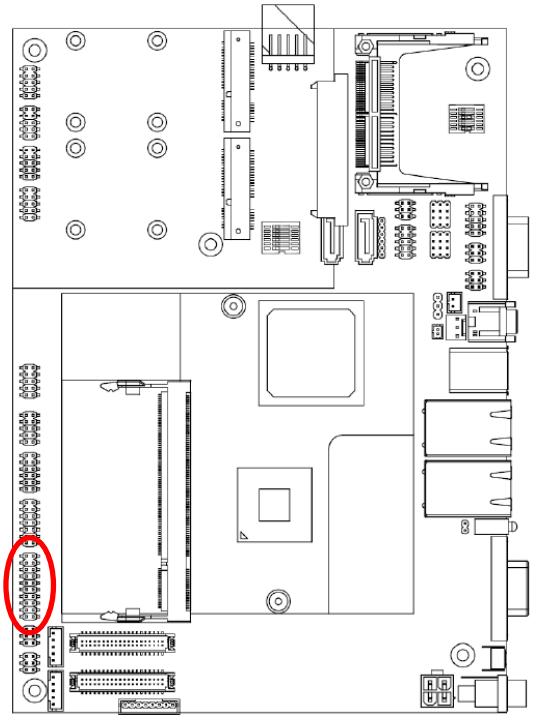
2.4.17 Serial port 3/ 4/ 5/ 6 connector (JCOM3/ JCOM4/ JCOM5/ JCOM6)

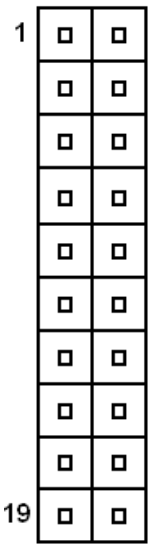




Signal	PIN	PIN	Signal
DCD	1	2	RxD
TxD	3	4	DTR
GND	5	6	DSR
RTS	7	8	CTS
RI	9	10	NC

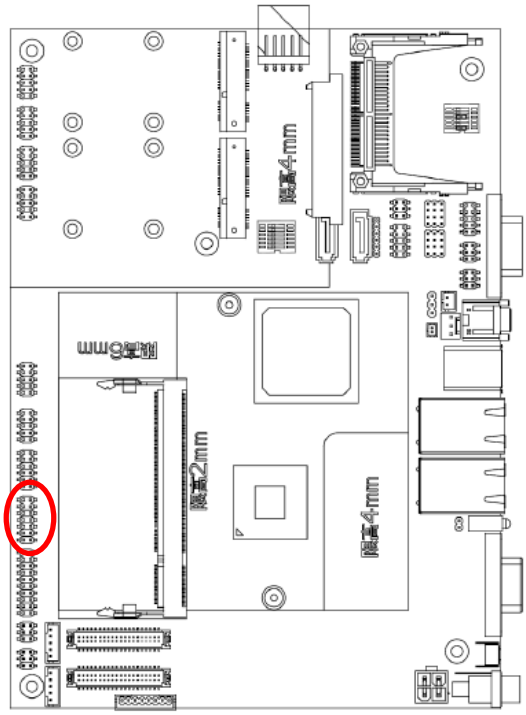
2.4.18 General purpose I/O connector (JDIO)

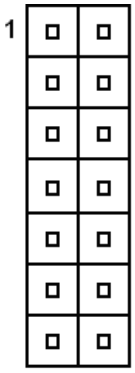




Signal	PIN	PIN	Signal
DIO0	1	2	DIO10
DIO1	3	4	DIO11
DIO2	5	6	DIO12
DIO3	7	8	DIO13
DIO4	9	10	DIO14
DIO5	11	12	DIO15
DIO6	13	14	DIO16
DIO7	15	16	DIO17
SMB_CLK_S	17	18	SMB_DATA_S
GND	19	20	+5V

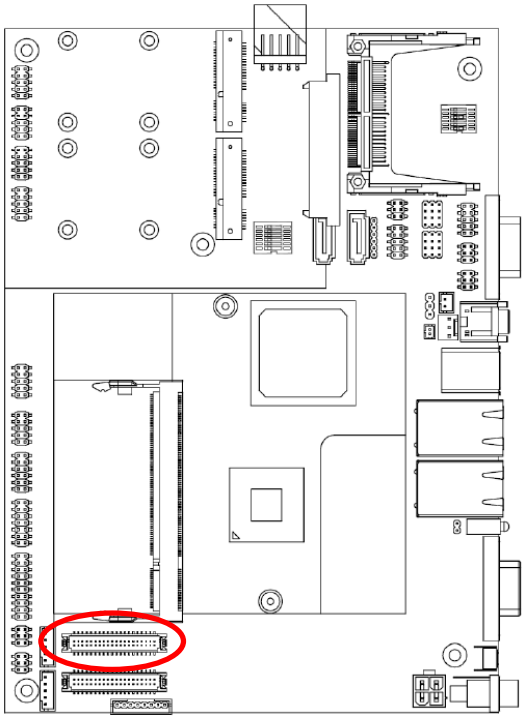
2.4.19 LED indicator connector (JLED)

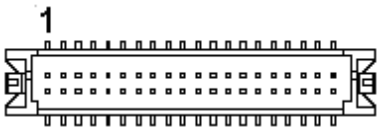




Signal	PIN	PIN	Signal
GND	1	2	+3.3V
HD_ACT#	3	4	+3.3V
LAN1_ACT	5	6	3.3V_SB
LAN2_ACT	7	8	3.3V_SB
ROUT-	9	10	ROUT+
LOUT-	11	12	LOUT+
PWRBTN#	13	14	GND

2.4.20 LVDS connector (JLVDS1)



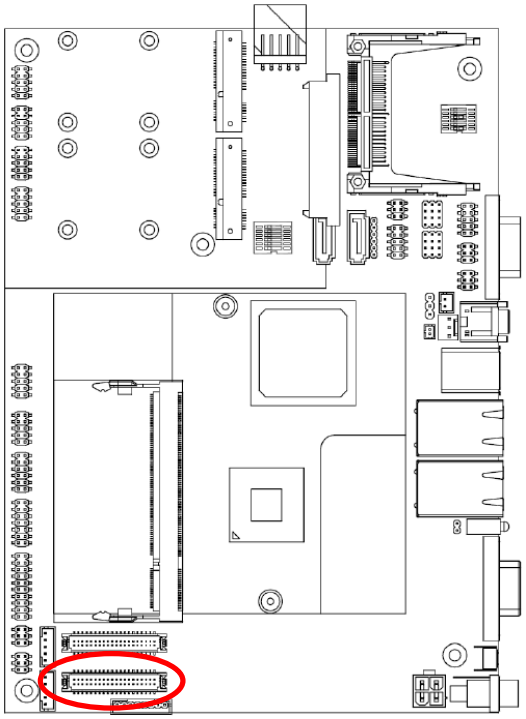


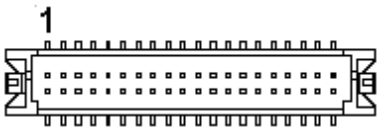
Signal	PIN	PIN	Signal
+5V	2	1	+3.3V
+5V	4	3	+3.3V
I^2C_DAT	6	5	I^2C_CLK
GND	8	7	GND
Txout0	10	9	Txout1
Txout0#	12	11	Txout1#
GND	14	13	GND
Txout2	16	15	NC
Txout2#	18	17	NC
GND	20	19	GND
NC	22	21	NC
NC	24	23	NC
GND	26	25	GND
NC	28	27	NC
NC	30	29	NC
GND	32	31	GND
Txclk	34	33	NC
Txclk#	36	35	NC
GND	38	37	GND
+12V	40	39	+12V

Signal Description – LVDS Connecter (JLVDS)

Signal	Description
I^2C_DAT, I^2C_CLK	I^2C interface for panel parameter EEPROM. This EERPOM is mounted on the LVDS receiver. The data in the EEPROM allows the EXT module to automatically set the proper timing parameters for a specific LCD panel.

2.4.21 LVDS connector (JLVDS2)



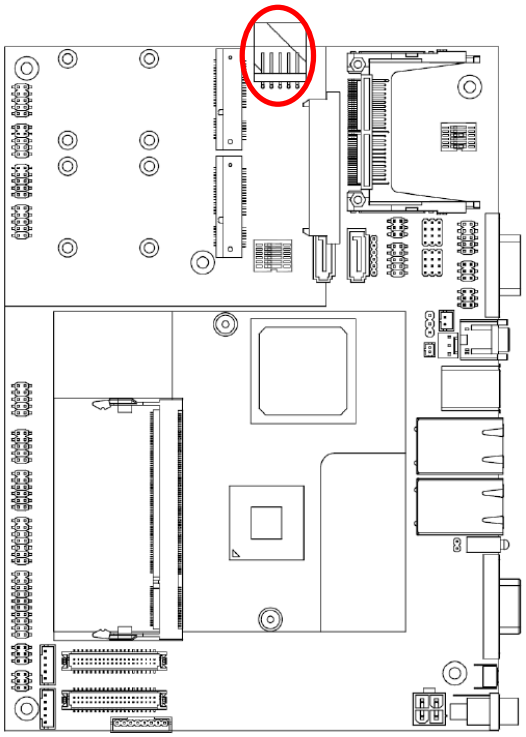


Signal	PIN	PIN	Signal
+5V	2	1	+3.3V
+5V	4	3	+3.3V
NC	6	5	NC
GND	8	7	GND
Txout0	10	9	Txout1
Txout0#	12	11	Txout1#
GND	14	13	GND
Txout2	16	15	Txout3
Txout2#	18	17	Txout3#
GND	20	19	GND
Txout4	22	21	Txout5
Txout4#	24	23	Txout5#
GND	26	25	GND
Txout6	28	27	Txout7
Txout6#	30	29	Txout7#
GND	32	31	GND
Txclk1	34	33	Txclk2
Txclk1#	36	35	Txclk2#
GND	38	37	GND
+12V	40	39	+12V

Note: Single/Dual 24-bit LVDS

1. CRT's resolution < LCD's resolution.
   If we boot from CRT & LCD, the resolution is fixed by CRT's resolution.
   If we boot from LCD only and plug the CRT in the OS, LCD works well but the CRT will have wrong resolution.
2. CRT's resolution > LCD's resolution.
   Both displays work fine.

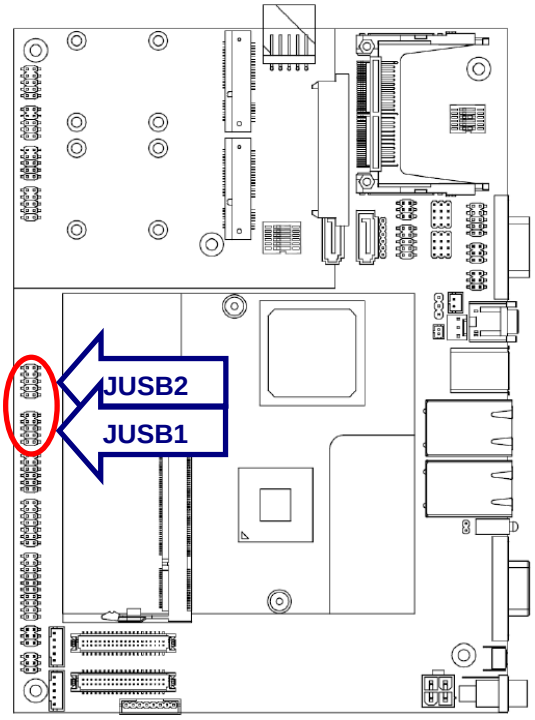
2.4.22 Touch panel connector (JTOUCH)

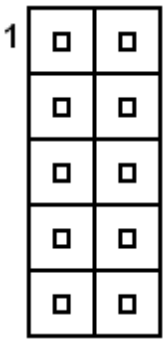


Signal	PIN
UL	1
UR	2
PROBE	3
LR	4
LL	5

NOTE: Under 4W situation
UL=X+, UR=Y+, LR=Y-, LL=X-

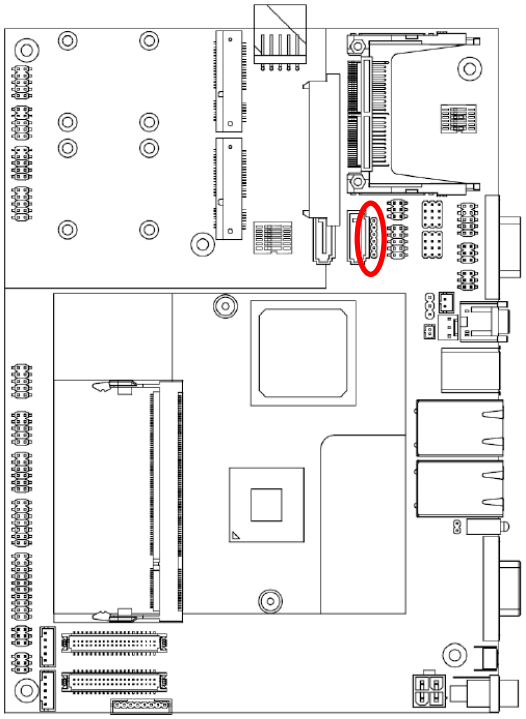
2.4.23 USB connector 4&5, 2&3, 6&7 (JUSB1/ JUSB2)

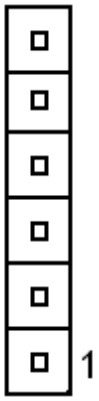




Signal	PIN	PIN	Signal
+5V	1	2	GND
D-	3	4	GND
D+	5	6	D+
GND	7	8	D-
GND	9	10	+5V

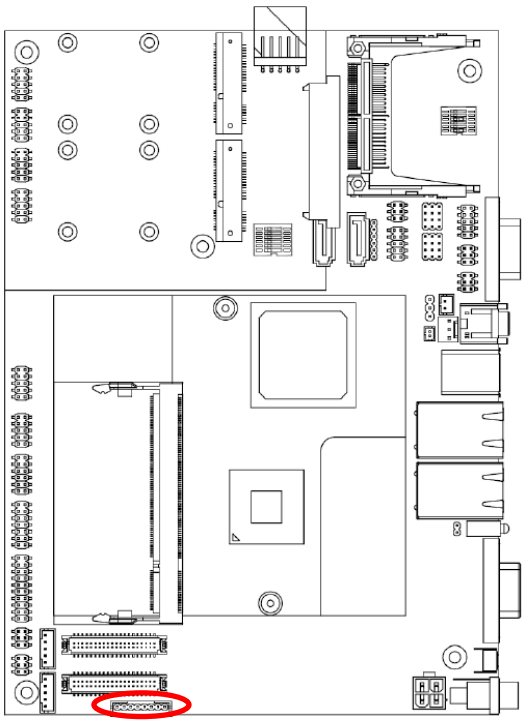
2.4.24 USB connector 9 (JUSB4)

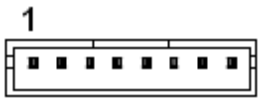




Signal	PIN
+5V	1
D-	2
D+	3
GND	4
GND	5
+3.3V	6

2.4.25 OSD for front panel key (JKEY)





Signal	PIN
GND	1
K-LED_GREEN	2
K-LED_RED	3
K-POWER	4
K-AUTO	5
K-MENU	6
K-RIGHT	7
K-LEFT	8

3. BIOS Setup

3.1 Introduction

The BIOS setup program allows users to modify the basic system configuration. In this following chapter will describe how to access the BIOS setup program and the configuration options that may be changed.

3.2 Starting Setup

The AMI BIOS™ is immediately activated when you first power on the computer. The BIOS reads the system information contained in the CMOS and begins the process of checking out the system and configuring it. When it finishes, the BIOS will seek an operating system on one of the disks and then launch and turn control over to the operating system.

While the BIOS is in control, the Setup program can be activated in one of two ways:
By pressing <Del> immediately after switching the system on, or
By pressing the <Del> key when the following message appears briefly at the bottom of the screen during the POST (Power On Self Test).

Press DEL to enter SETUP

If the message disappears before you respond and you still wish to enter Setup, restart the system to try again by turning it OFF then ON or pressing the "RESET" button on the system case. You may also restart by simultaneously pressing <Ctrl>, <Alt>, and <Delete> keys. If you do not press the keys at the correct time and the system does not boot, an error message will be displayed and you will again be asked to.

Press F1 to Continue, DEL to enter SETUP

3.3 Using Setup

In general, you use the arrow keys to highlight items, press <Enter> to select, use the PageUp and PageDown keys to change entries, press <F1> for help and press <Esc> to quit. The following table provides more detail about how to navigate in the Setup program using the keyboard.

Button	Description
↑	Move to previous item
↓	Move to next item
←	Move to the item in the left hand
→	Move to the item in the right hand
Esc key	Main Menu -- Quit and not save changes into CMOS Status Page Setup Menu and Option Page Setup Menu -- Exit current page and return to Main Menu
PgUp key	Increase the numeric value or make changes
PgDn key	Decrease the numeric value or make changes
+ key	Increase the numeric value or make changes
- key	Decrease the numeric value or make changes
F1 key	General help, only for Status Page Setup Menu and Option Page Setup Menu
(Shift) F2 key	Change color from total 16 colors. F2 to select color forward, (Shift) F2 to select color backward
F3 key	Calendar, only for Status Page Setup Menu
F4 key	Reserved
F5 key	Restore the previous CMOS value from CMOS, only for Option Page Setup Menu
F6 key	Load the default CMOS value from BIOS default table, only for Option Page Setup Menu
F7 key	Load the default
F8 key	Reserved
F9 key	Reserved
F10 key	Save all the CMOS changes, only for Main Menu

- **Navigating Through The Menu Bar**
  Use the left and right arrow keys to choose the menu you want to be in.

Note: Some of the navigation keys differ from one screen to another.

- **To Display a Sub Menu**
  Use the arrow keys to move the cursor to the sub menu you want. Then press <Enter>. A "➢" pointer marks all sub menus.

3.4 Getting Help

Press F1 to pop up a small help window that describes the appropriate keys to use and the possible selections for the highlighted item. To exit the Help Window press <Esc> or the F1 key again.

3.5 In Case of Problems

If, after making and saving system changes with Setup, you discover that your computer no longer is able to boot, the AMI BIOS supports an override to the CMOS settings which resets your system to its defaults.

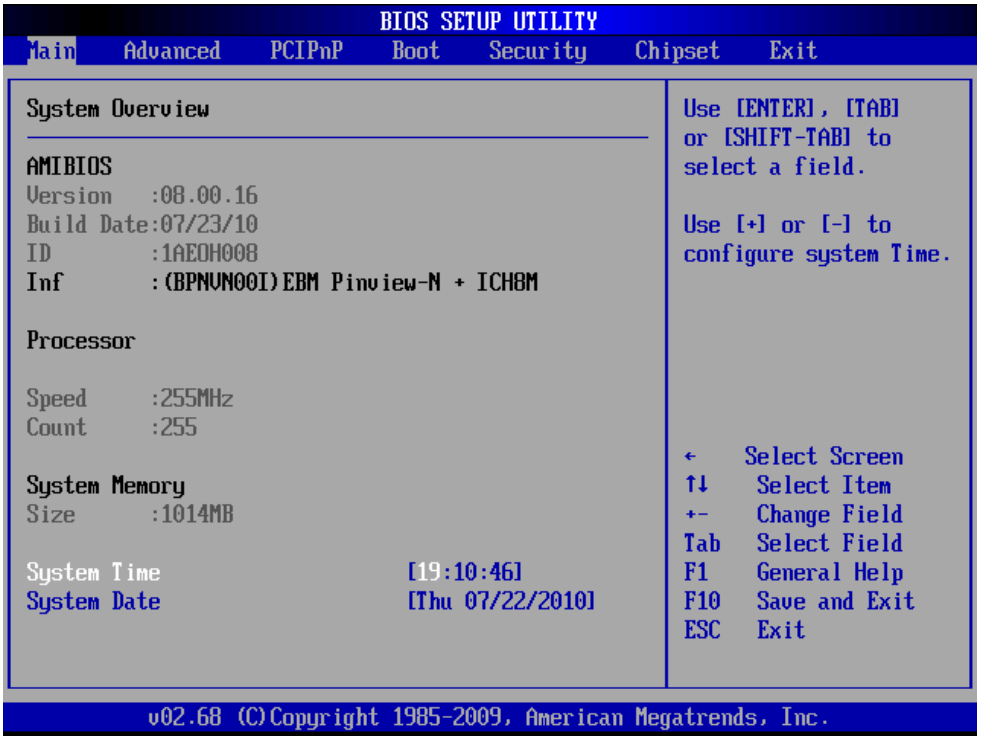
The best advice is to only alter settings which you thoroughly understand. To this end, we strongly recommend that you avoid making any changes to the chipset defaults. These defaults have been carefully chosen by both Award and your systems manufacturer to provide the absolute maximum performance and reliability. Even a seemingly small change to the chipset setup has the potential for causing you to use the override.

3.6 BIOS setup

Once you enter the AMI BIOS CMOS Setup Utility, the Main Menu will appear on the screen. The Main Menu allows you to select from several setup functions and exit choices. Use the arrow keys to select among the items and press <Enter> to accept and enter the sub-menu.

3.5.1 Main Menu

This section allows you to record some basic hardware configurations in your computer and set the system clock.



3.5.1.1 System Time

Use the system Date option to set the system date. Manually enter the day, month and year.

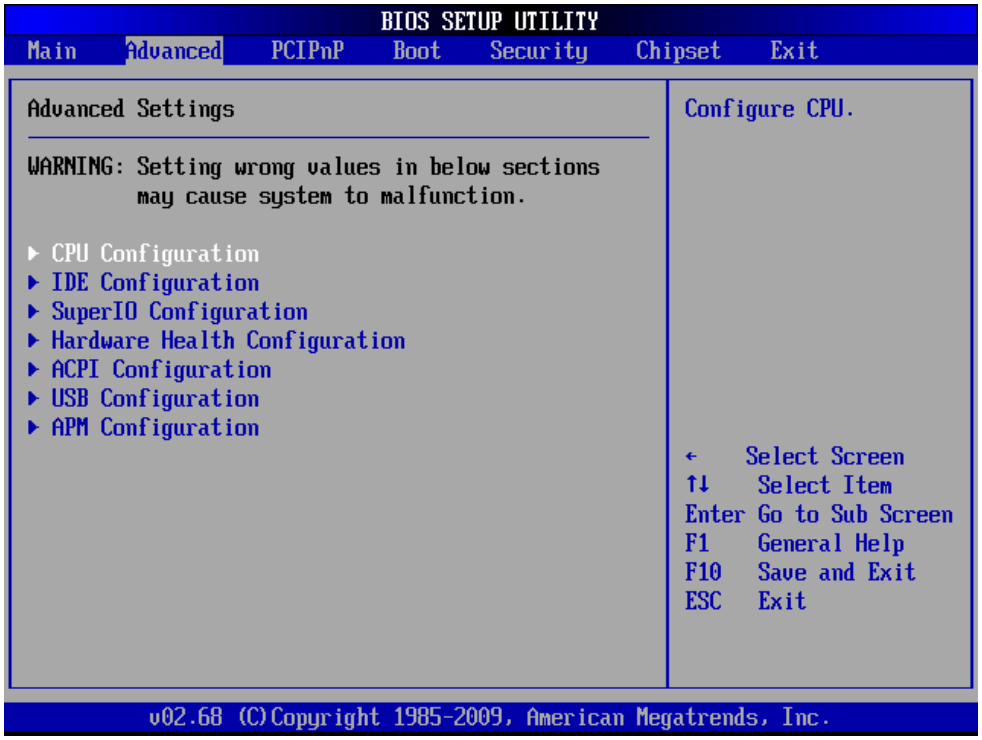
3.5.1.2 System Date

Use the system time option to set the system time. Manually enter the hours, minutes and seconds.

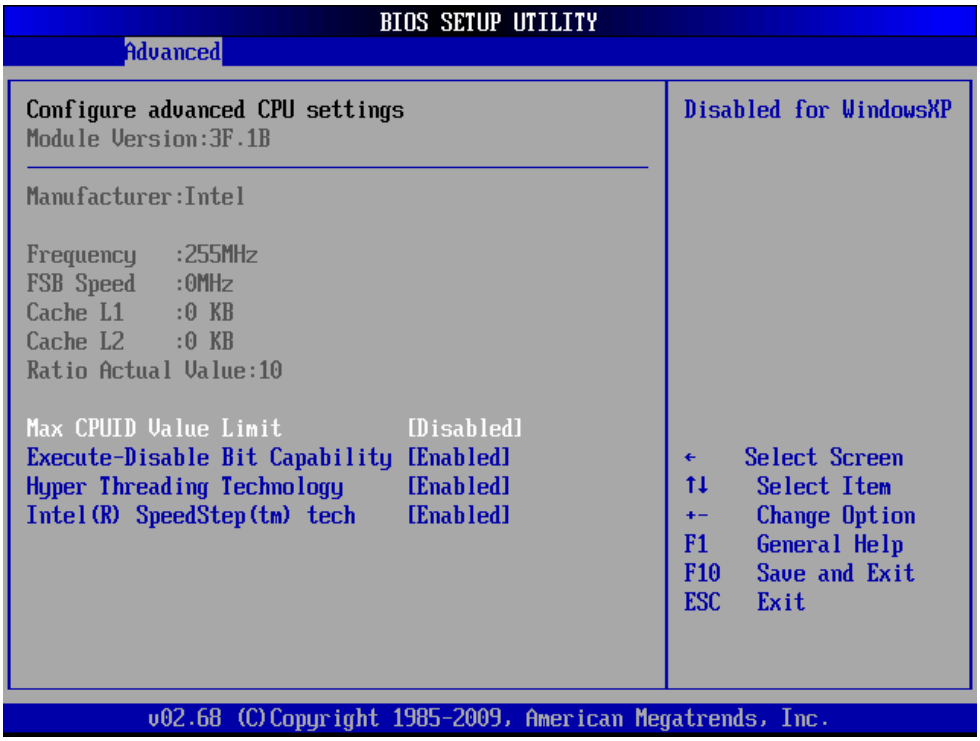
Note: The BIOS setup screens shown in this chapter are for reference purposes only, and may not exactly match what you see on your screen.
Visit the Avalue website (www.avalue.com.tw) to download the latest product and BIOS information.

3.5.2 Advanced Menu

This section allows you to configure your CPU and other system devices for basic operation through the following sub-menus.

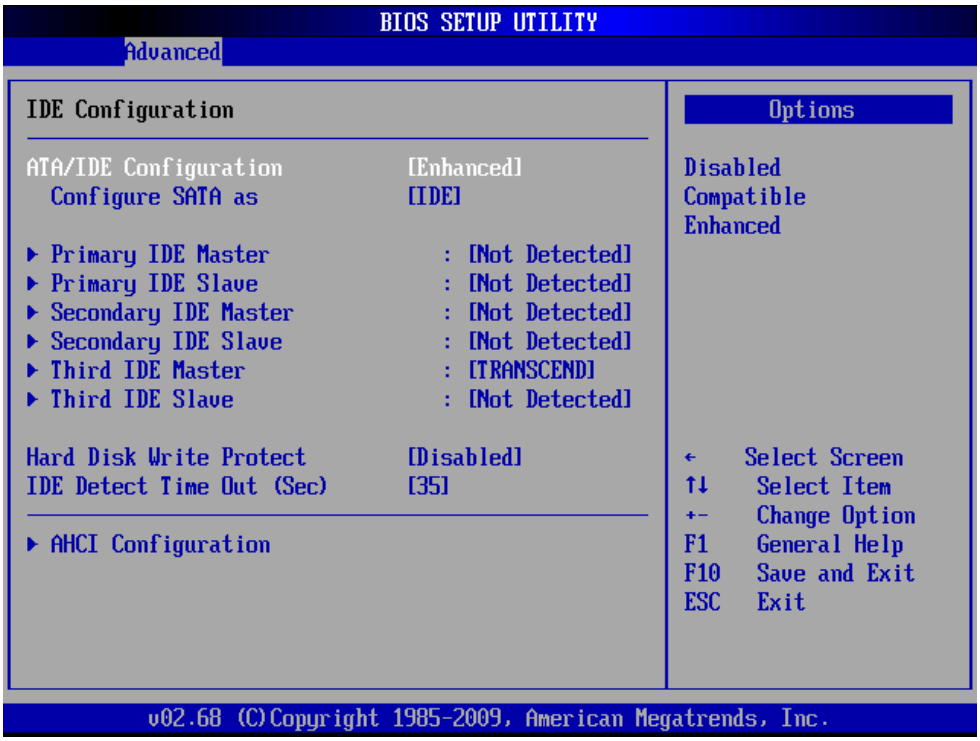


3.5.2.1 CPU Configuration



Item	Options	Description
Max CPUID Value Limit	Disabled, Enabled	This item allows you to limit CPUID maximum value.
Execute-Disable Bit Capability	Disabled, Enabled	This item allows you to enable or disable the No-Execution page protection technology.
Hyper Threading Technology	Disabled, Enabled	This item allows you to enable or disable Intel® Hyper Threading technology.
Intel® SpeedStep™ tech	Disabled, Enabled	This item allows you to enable or disable Intel® SpeedStep™ tech.

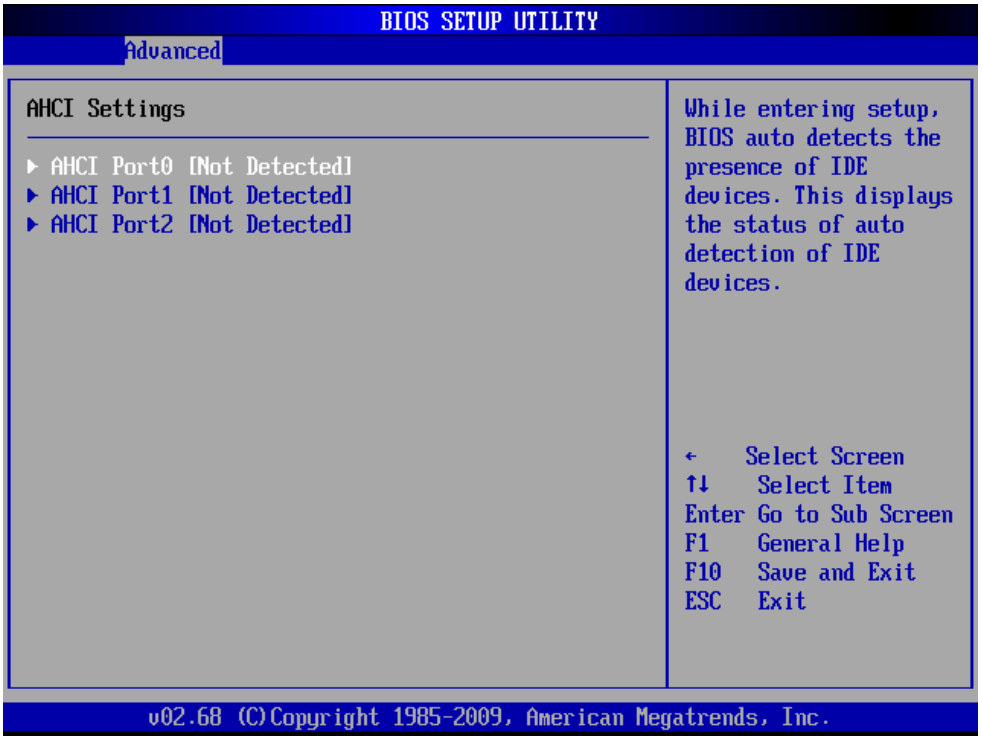
3.5.2.2 IDE Configuration



Item	Options	Description
ATA/ IDE Configuration	Disabled, Compatible, Enhanced	This can be configured as Disabled, Compatible or Enhanced.
Configure SATA as	IDE, RAID, AHCI	Use the configure SATA as BIOS option to configure the SATA port as an IDE drive, a SATA drive (AHCI mode) or a SATA drive in a RAID configuration.
Primary/ Secondary/ Third IDE Master	Disabled, Enabled	Use the IDE Master and IDE Slave configuration menu to view both primary and secondary IDE device details and configure the IDE devices connected to the system.
Primary/ Secondary/ Third IDE Slave	Disabled, Enabled	Use the IDE Master and IDE Slave configuration menu to view both primary and secondary IDE device details and configure the IDE devices connected to the system.
Hard Disk Write Protect	Disabled, Enabled	Disable/ Enable device write protection. This will effective only if device is accessed through BIOS.
IDE Detect Time Out (Sec)	0/ 5/ 10/ 15/ 20/ 25/ 30/ 35	This allows you to select the time out value for detecting ATA/ ATAPI devices.

3.5.2.2.1 AHCI Configuration

While entering setup, BIOS auto detects the presence of IDE devices. This displays the status of auto detection of IDE devices.


BIOS SETUP UTILITY
Advanced
AHCI Settings
AHCI Port0 [Not Detected]
AHCI Port1 [Not Detected]
AHCI Port2 [Not Detected]
While entering setup, BIOS auto detects the presence of IDE devices. This displays the status of auto detection of IDE devices.
← Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
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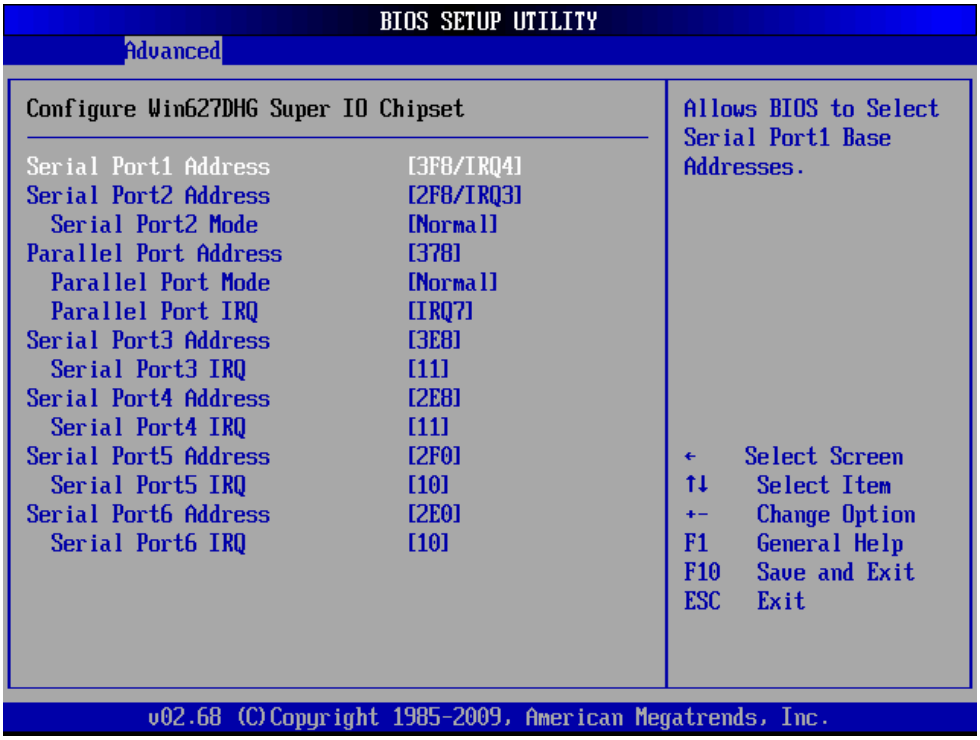
Item	Options	Description
SATA Port 0/ 1/ 2	Auto, Not Installed	Serial port 0/ 1/ 2 mode select.
S.M.A.R.T.	Disabled, Enabled	Select the smart monitoring, analysis, and reporting technology.

3.5.2.3 Super I/O Configuration

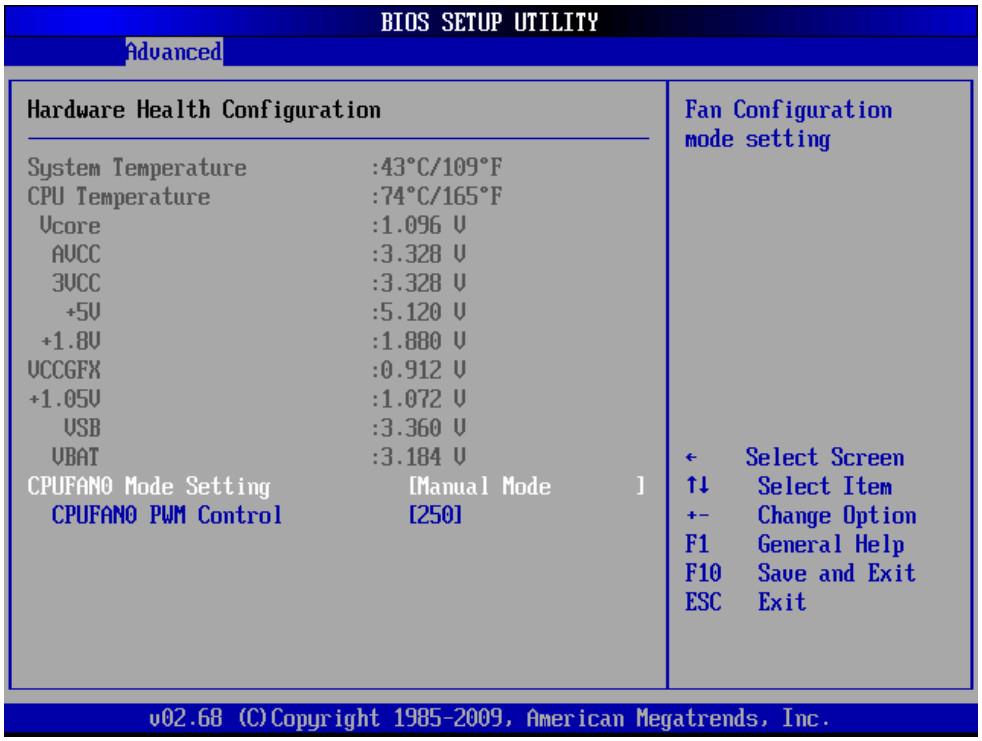
You can use this item to set up or change the Super IO configuration for FDD controllers, parallel ports and serial ports.



Item	Options	Description
Serial Port 1/ 2/ 3/ 4/ 5/ 6 Address	Disabled, 3F8, 2F8, 3E8, 2E8, 2F0, 2E0	This item allows you select serial port 1 ~ 6 of base addresses.
Serial Port 2/ 5/ 6 Type	422, 485	This item allows you select serial port 2/ 5/ 6 of type.
Serial Port 3/ 4/ 5/ 6 IRQ	4/ 9/ 10/ 11	This item allows you select serial port 3 ~ 6 of IRQ.
Parallel Port Address	Disabled, 378, 278, 3BC	The Parallel Address BIOS option assigns the I/O port address of the parallel port.
Parallel Port Mode	Normal, EPP, ECP, EPP+ECP	The Parallel Port Mode selection selects the mode the parallel port operations in.
Parallel Port IRQ	IRQ5, IRQ7	The Parallel Port Address BIOS option assigns the parallel port interrupt address.

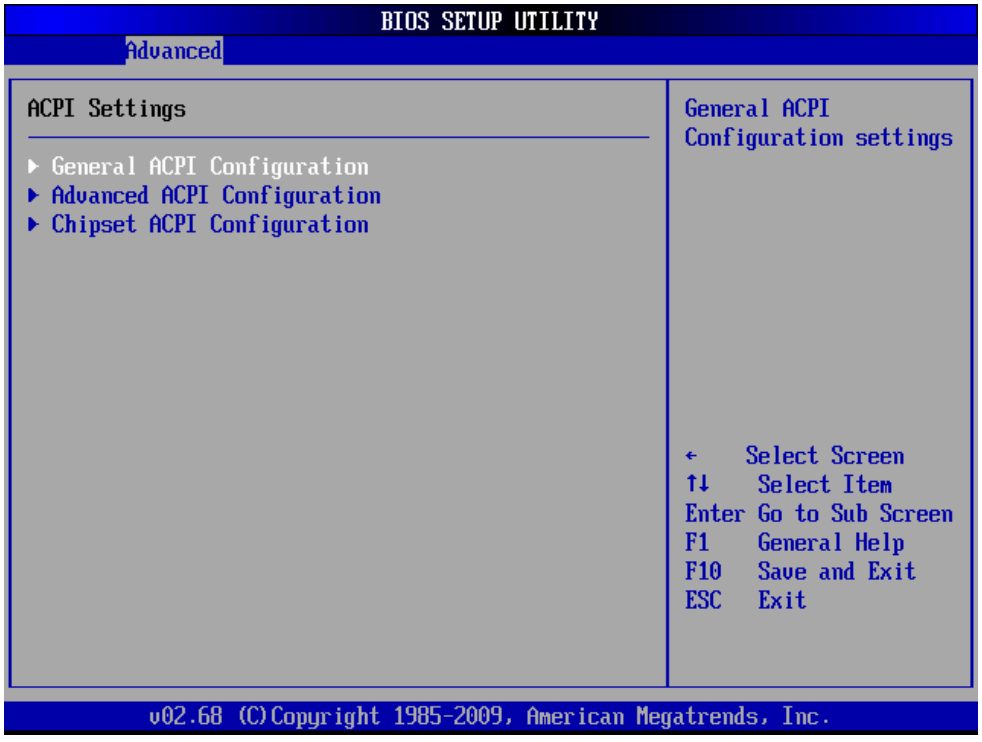
3.5.2.4 Hardware Health Configuration

This section allows you to control H/W monitoring.

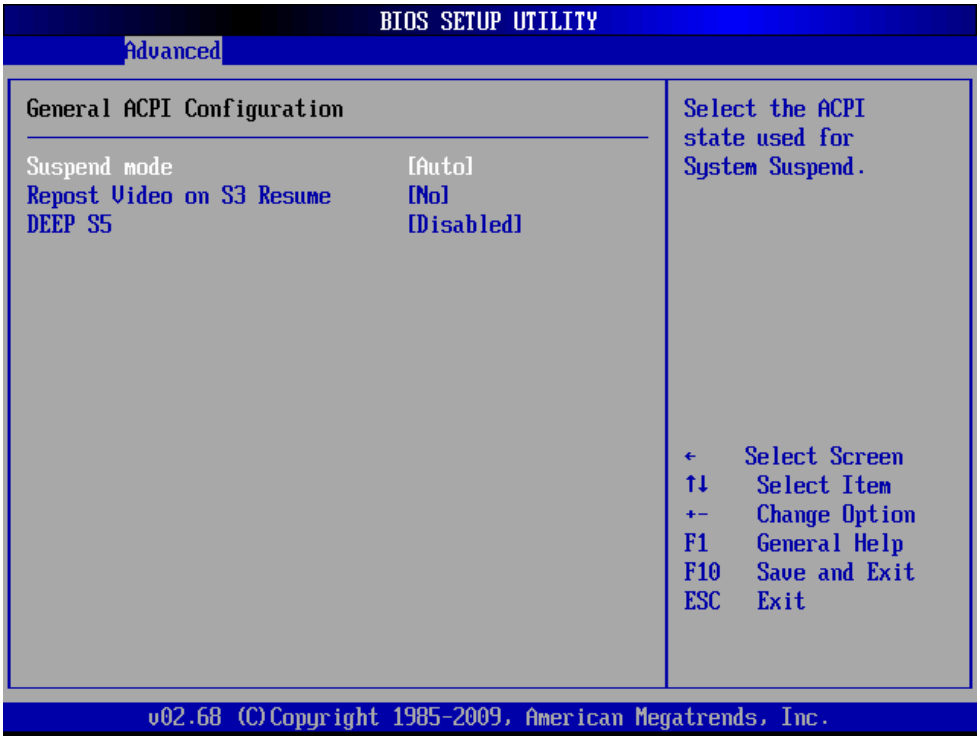


3.5.2.5 ACPI Settings

You can use this item to set up ACPI Configuration. Please refer to 3.5.2.5.1 ~ 3.5.2.5.3 for more details.



3.5.2.5.1 General ACPI Configuration



Item	Options	Description
Suspend Mode	S1 (POS), S3 (STR), Auto	Select the ACPI states used for system suspend.
Repost Video on S3 Resume	No, Yes	This item allows you to invoke VGA BIOS POST on S3/ STR resume.
Deep S5	Disabled, Enabled	All PME/ wakeup event will be disabled in S4/ S5 mode when enabled DEEP S5.

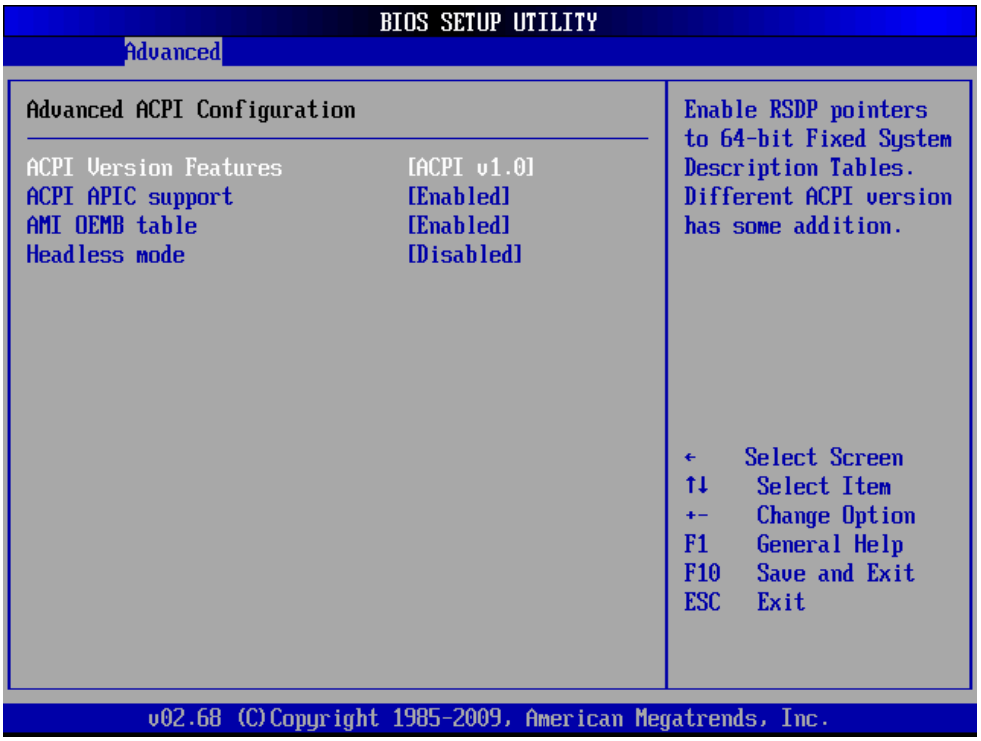
Note:

Deep S5=ErP

ErP mode: 1. No Timer-Power-On

2. No Wake On Ring/ LAN

3.5.2.5.2 Advanced ACPI Configuration


BIOS SETUP UTILITY
Advanced
Advanced ACPI Configuration
ACPI Version Features [ACPI v1.0]
ACPI APIC support [Enabled]
AMI OEMB table [Enabled]
Headless mode [Disabled]
Enable RSDP pointers to 64-bit Fixed System Description Tables. Different ACPI version has some addition.
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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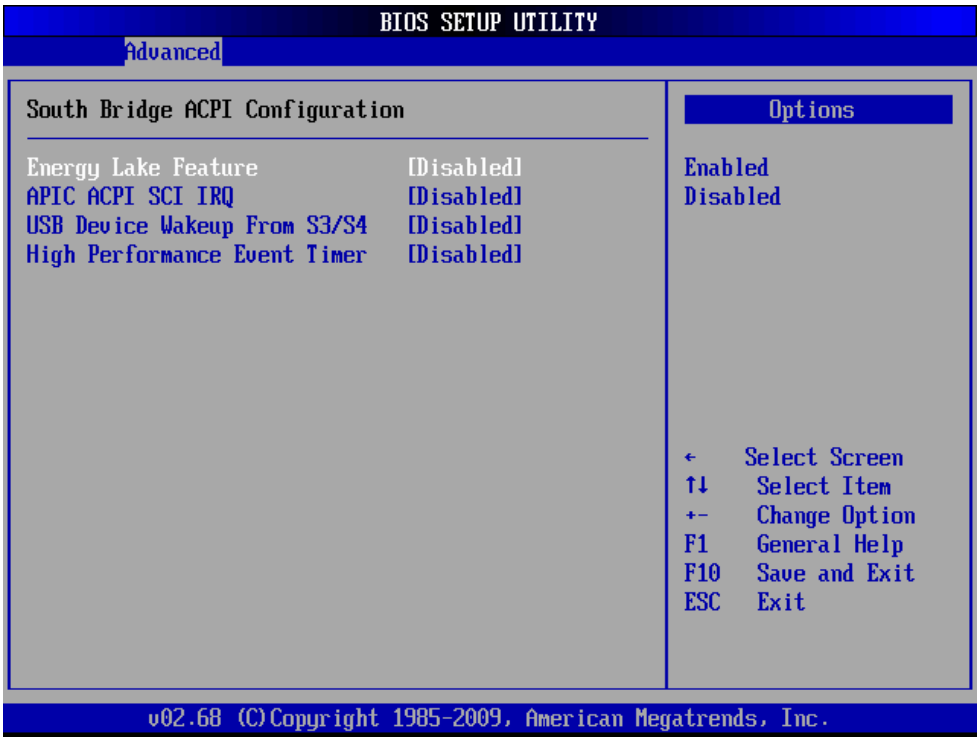
Item	Options	Description
ACPI Version Features	ACPI v1.0, ACPI v2.0, ACPI v3.0	This item allows you enable RSDP pointers to 64-bit fixed system description tables.
ACPI APIC support	Enabled, Disabled	Include APIC table pointer to RSDT pointer list.
AMI OEMB table	Enabled, Disabled	Include OEMB table pointer to R(x)SDT pointer list.
Headless mode	Disabled, Enabled	Enable/ Disable Headless operation mode through ACPI.

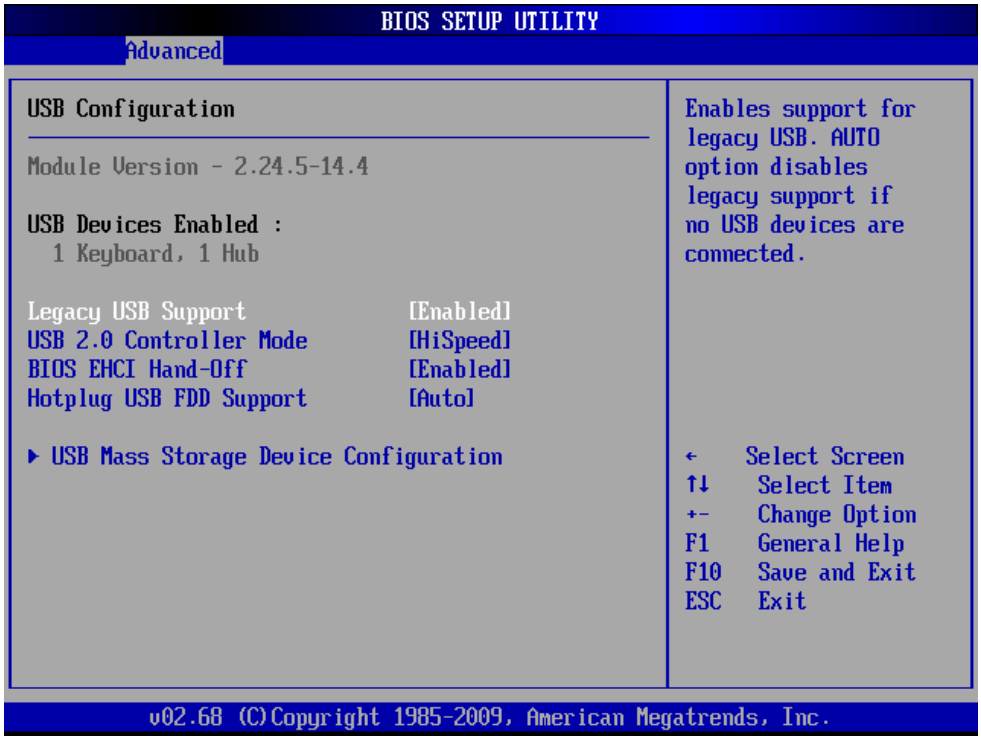
3.5.2.5.3 Chipset ACPI Configuration



Item	Options	Description
Energy Lake Feature	Disabled, Enabled	This item allows selecting energy lake feature mode.
APIC ACPI SCI IRQ	Disabled, Enabled	This item allows to enable/ disable APIC ACPI SCI IRQ.
USB Device Wakeup From S3/ S4	Disabled, Enabled	This item allows selecting USB device wakeup mode.
High Performance Event Timer	Disabled, Enabled	This section helps to set high performance event timer.

3.5.2.6 USB Configuration

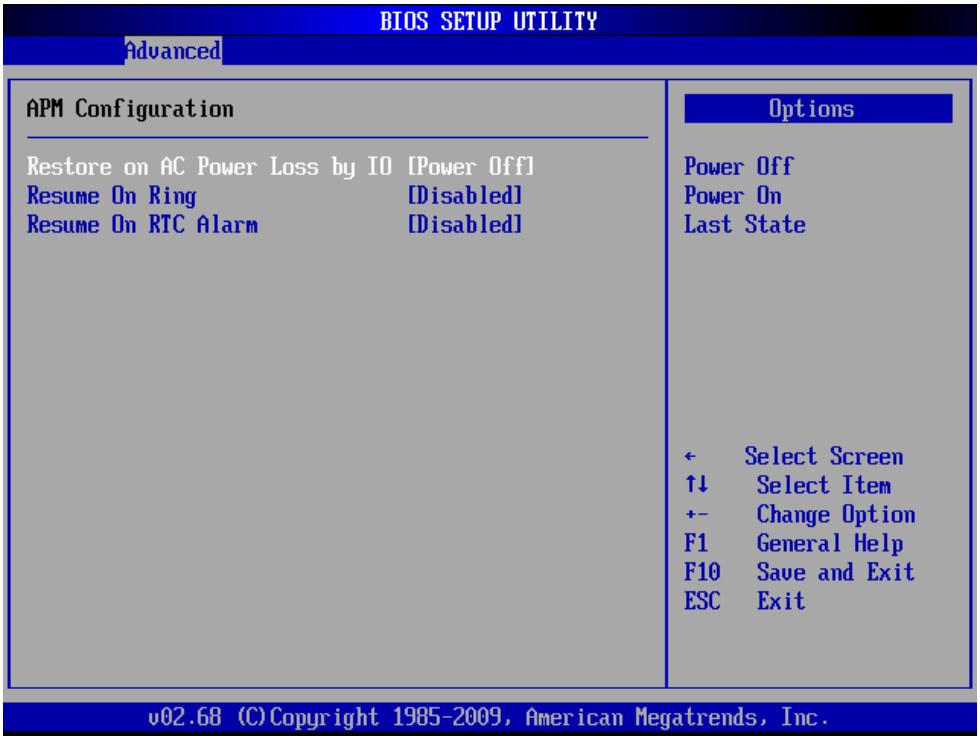
The USB configuration menu is used to read USB configuration information and configure the USB setting.


BIOS SETUP UTILITY
Advanced
USB Configuration
Module Version - 2.24.5-14.4
USB Devices Enabled :
1 Keyboard, 1 Hub
Legacy USB Support [Enabled]
USB 2.0 Controller Mode [HiSpeed]
BIOS EHCI Hand-Off [Enabled]
Hotplug USB FDD Support [Auto]
USB Mass Storage Device Configuration
Enables support for legacy USB. AUTO option disables legacy support if no USB devices are connected.
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.68 (C)Copyright 1985-2009, American Megatrends, Inc.

Item	Options	Description
Legacy USB Support	Enabled, Disabled, Auto	Use the Legacy USB Support BIOS option to enable USB mouse and USB keyboard support. Normally if this option is not enabled, any attached USB mouse or USB keyboard does not become available until a USB compatible operating system is fully booted with all USB drivers loaded. When this option is enabled, any attached USB mouse or USB keyboard can control the system even when there is no USB driver loaded onto the system.
USB 2.0 Controller Mode	HiSpeed (480Mbps), FullSpeed (12Mpbs)	This item allows you to select HiSpeed (480Mbps) or FullSpeed (12Mpbs).
BIOS EHCI Hand-Off	Enabled, Disabled	This is a workaround for OSs without EHCI hand-off support. The EHCI ownership change should be claimed by EHCI driver.
Hotplug USB FDD Support	Enabled, Disabled, Auto	A dummy FDD devices is created that will be associated with the hotplugged FDD later. Auto option creates this dummy device only if there is no USB present.

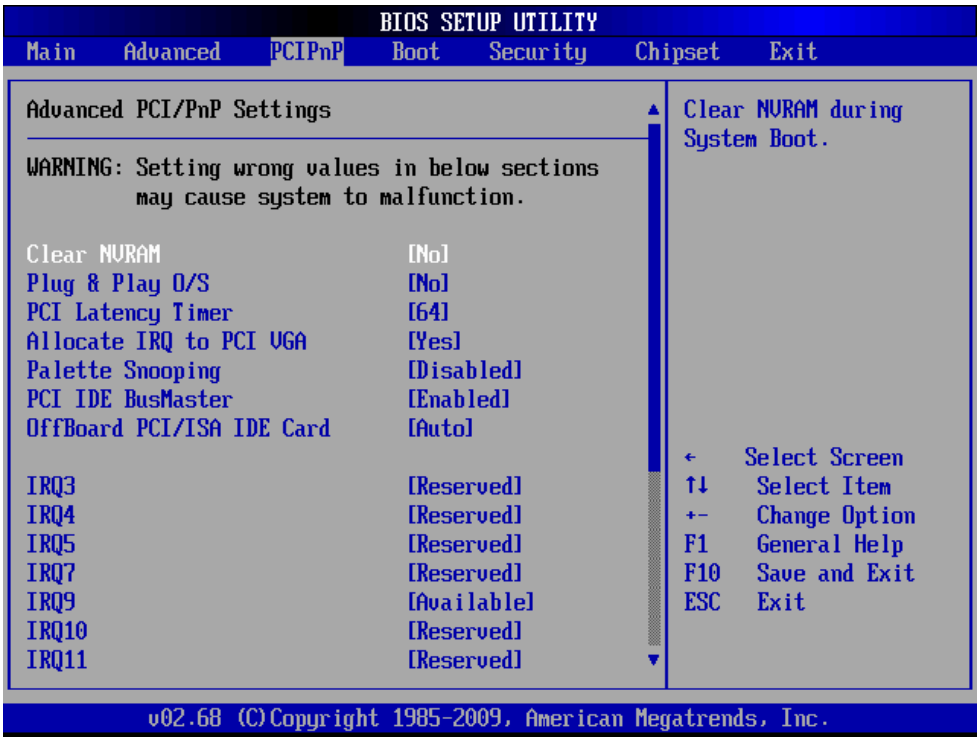
3.5.2.7 APM Configuration

The APM Configuration menu allows the advanced power management options to be configured.



Item	Options	Description
Restore on AC Power Loss by IO	Power On, Power Off, Last State	Use this to set up the system response after a power failure.
Resume On Ring	Disabled, Enabled	Use the Resume on Ring BIOS option to enable activity on the RI (ring in) modem line to rouse the system from a suspend or standby state. That is, the system is roused by an incoming call on modem.
Resume On RTC Alarm	Disabled, Enabled	Use the Resume on RTC Alarm option to specify the time the system should be roused from a suspend state.

3.5.3 Advanced PCI/ PnP Settings

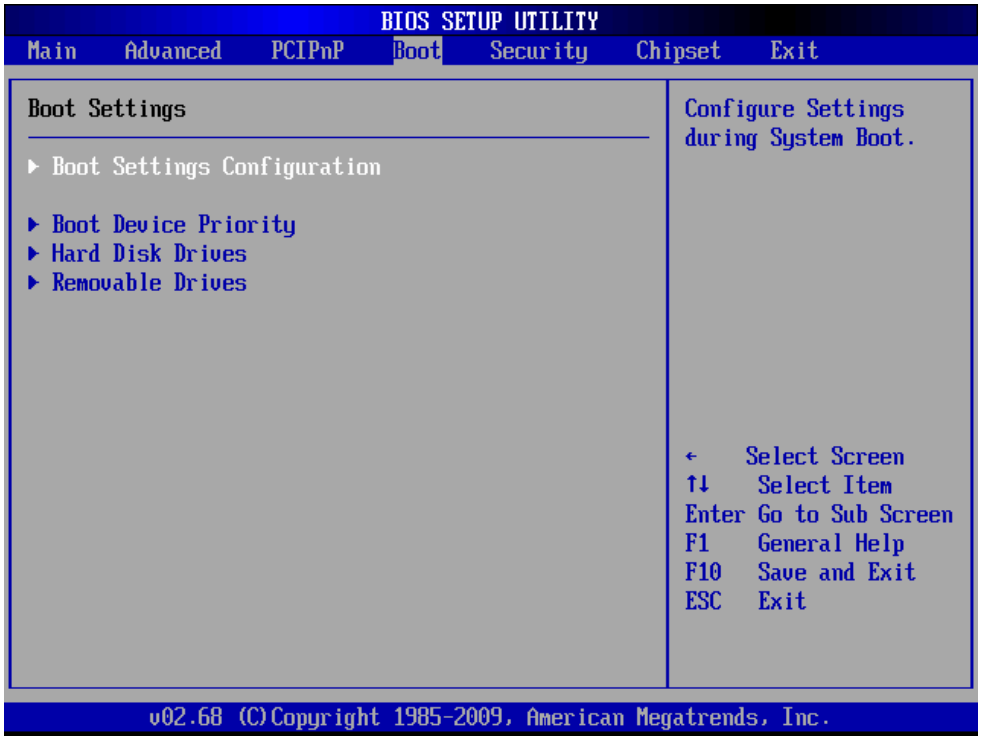


Item	Options	Description
Clear NURAM	No, Yes	Set this value to force the BIOS to clear the Non-volatile Random Access Memory (NVRAM). The Original and Fail-Safe default setting is No.
Plug & Play O/S	No, Yes	When set No, BIOS configures all the device in the system. When set to Yes and if you still a Plug and Play operating system, the operating system configures the plug and Play device not required for boot.
PCI Latency Timer	32, 64, 96, 128, 160, 192, 224, 248	Value in units of PCI clocks for PCI device latency timer register.
Allocate IRQ to PCI VGA	No, Yes	When set to Yes will assigns IRQ to PCI VGA card if card requests IRQ. When set to No will not assign IRQ to PCI VGA card even if card requests an IRQ.
PaletteSnooping	Disabled, Enabled	This item designed to solve problems caused by some non-standard VGA card.

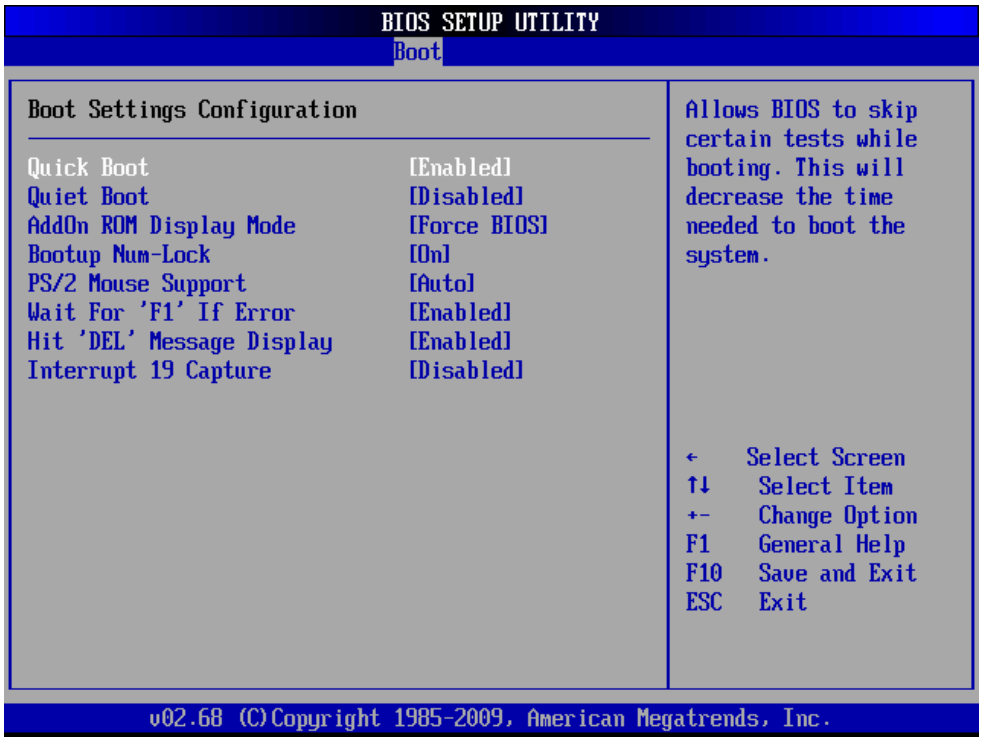
PCI IDE BusMaster	Disabled, Enabled	When set to enabled BIOS uses PCI busmastering for reading/ writing to IDE drives.
OffBoard PCI/ ISA IDE Card	Auto, PCI Slot 1/ 2/ 3/ 4/ 5/ 6	Some PCI IDE cards may require this to be set to the PCI slot number that is holding the card. When set to auto will works for most PCI IDE cards.
IRQ3/ 4/ 5/ 7/ 9/ 10/ 11	Available, Reserved	Use the IRQ# address to specify what IRQs can be assigned to a particular peripheral device.

3.5.4 Boot Settings

Use the Boot menu to configure system boot options.



3.5.4.1 Boot Settings Configuration


BIOS SETUP UTILITY
Boot
Boot Settings Configuration
Quick Boot [Enabled]
Quiet Boot [Disabled]
AddOn ROM Display Mode [Force BIOS]
Bootup Num-Lock [On]
PS/2 Mouse Support [Auto]
Wait For 'F1' If Error [Enabled]
Hit 'DEL' Message Display [Enabled]
Interrupt 19 Capture [Disabled]
Allows BIOS to skip certain tests while booting. This will decrease the time needed to boot the system.
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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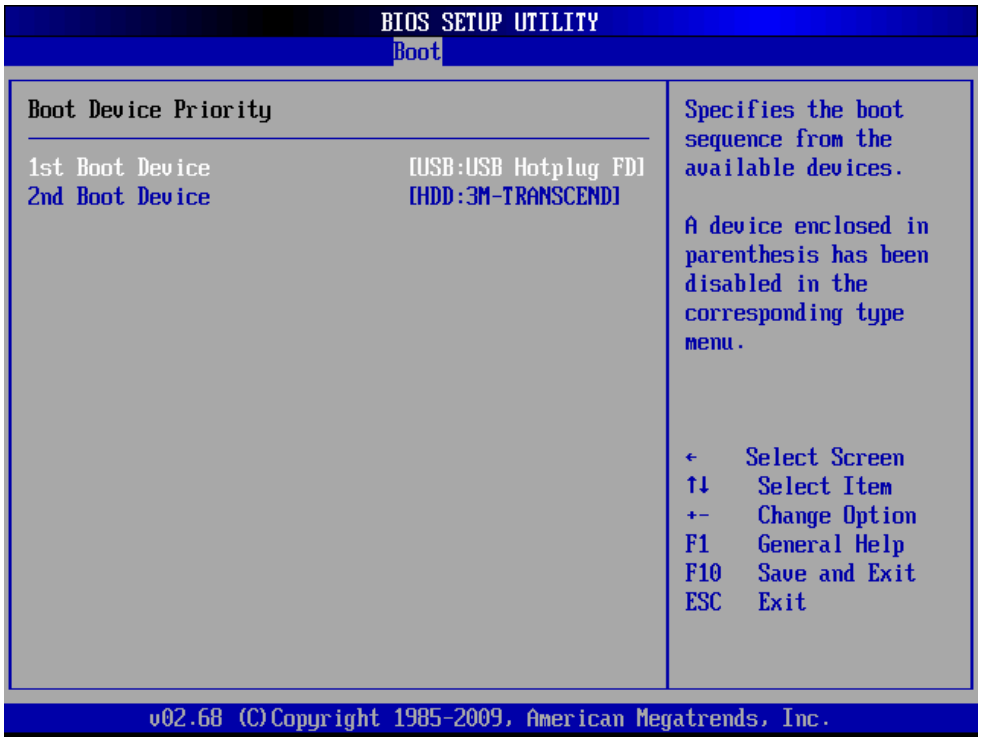
Item	Options	Description
Quick Boot	Disabled, Enabled	Use the quick boot BIOS option to make the computer speed up the boot process.
Quiet Boot	Disabled, Enabled	Use the quiet boot BIOS option to select the screen display when the system boots.
AddOn ROM Display Mode	Force BIOS, Keep Curren	The AddOn ROM Display Mode option allows add-on ROM (read-only memory) messages to be displayed.
Bootup Num-Lock	On, Off	The Bootup Num-Lock BIOS option allows the number Lock setting to be modified during boot up.
PS/2 Mouse Support	Disabled, Enabled, Auto	This select support for PS/w mouse.
Wait For 'F1' if Error	Disabled, Enabled	When set to enable, the system waits for the F1 key to be pressed when error occurs. This allows option ROM to trap interrupt19.
Hit 'DEL' Message Display	Disabled, Enabled	This displays 'Press <DEL> to run Setup> in POST.
Interrupt 19 Capture	Disabled, Enabled	This allows option ROMs to trap interrupt19.

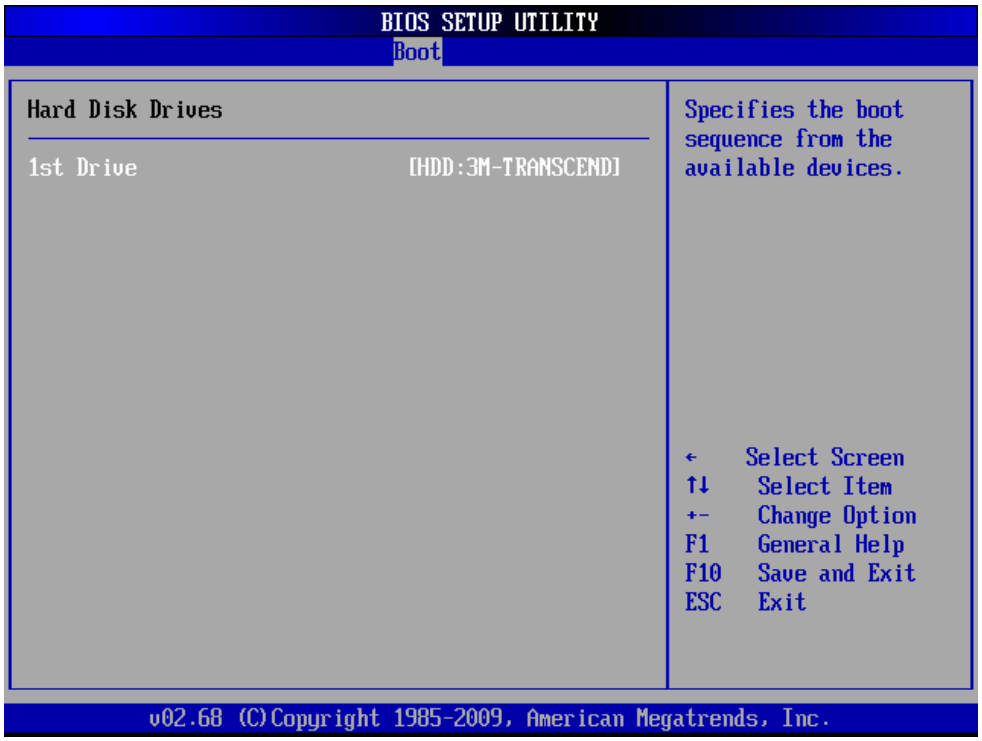
3.5.4.2 Boot Device Priority

Use the Boot Device Priority menu to specify the boot sequence from the available devices.


BIOS SETUP UTILITY
Boot
Boot Device Priority
1st Boot Device [USB:USB Hotplug FD]
2nd Boot Device [HDD:3M-TRANSCEND]
Specifies the boot sequence from the available devices.
A device enclosed in parenthesis has been disabled in the corresponding type menu.
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
v02.68 (C)Copyright 1985-2009, American Megatrends, Inc.

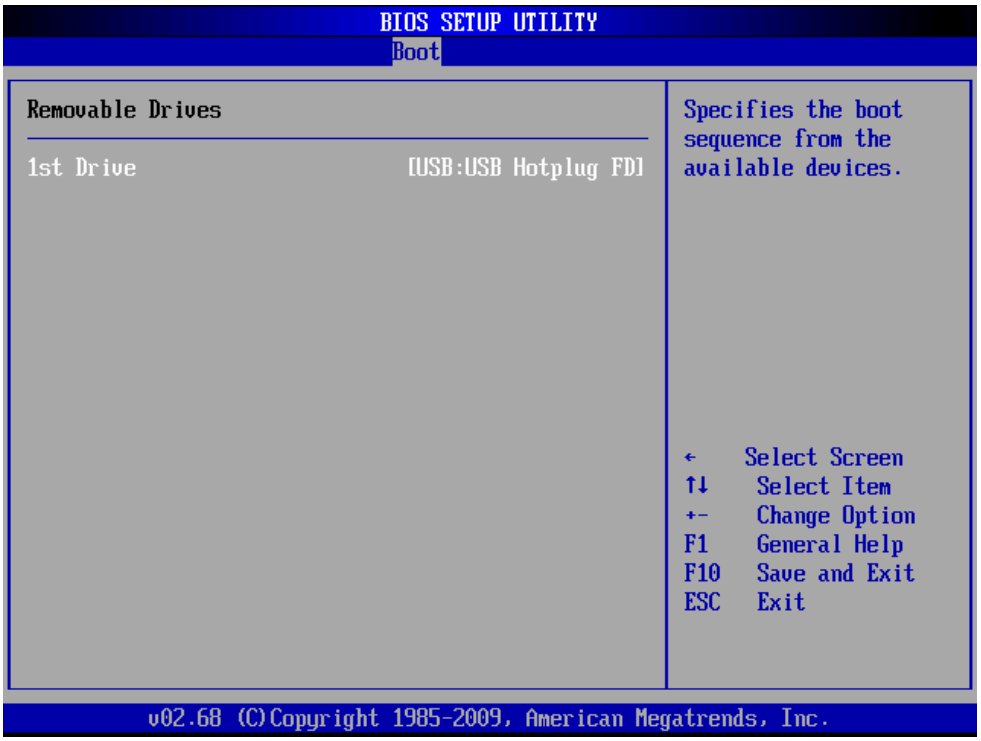
3.5.4.3 Hard Disk Devices

Use the Hard Disk Drives menu to specify the boot sequence of the available HDDs.



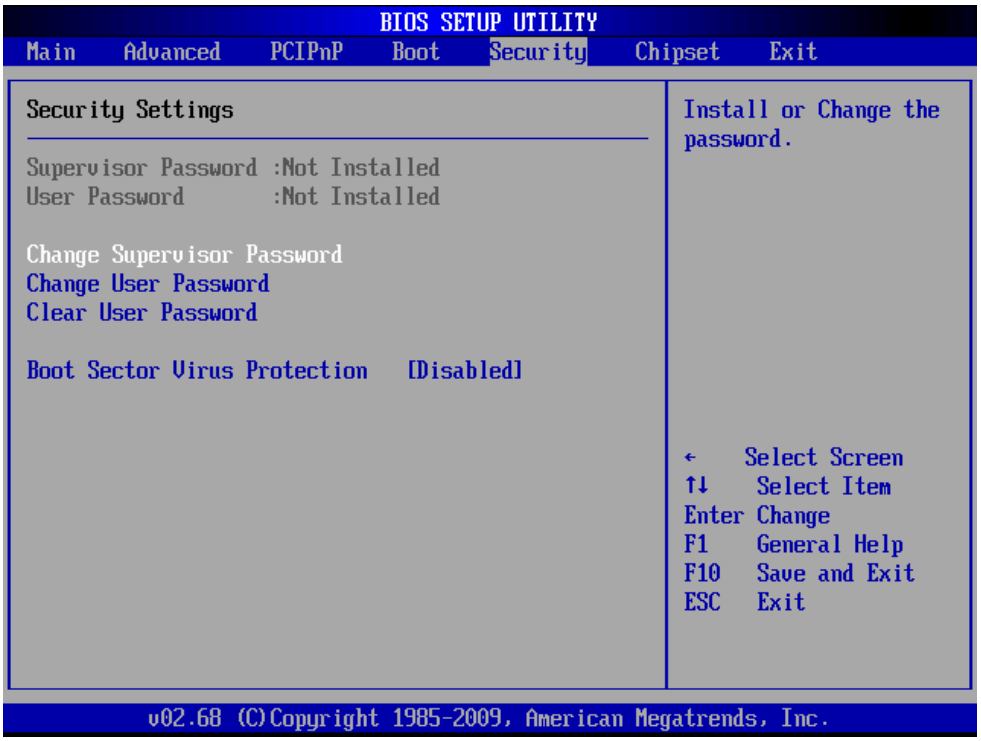
3.5.4.4 Removable Devices

Use the Removable Drives menu to specify the boot sequence of the available FDDs.



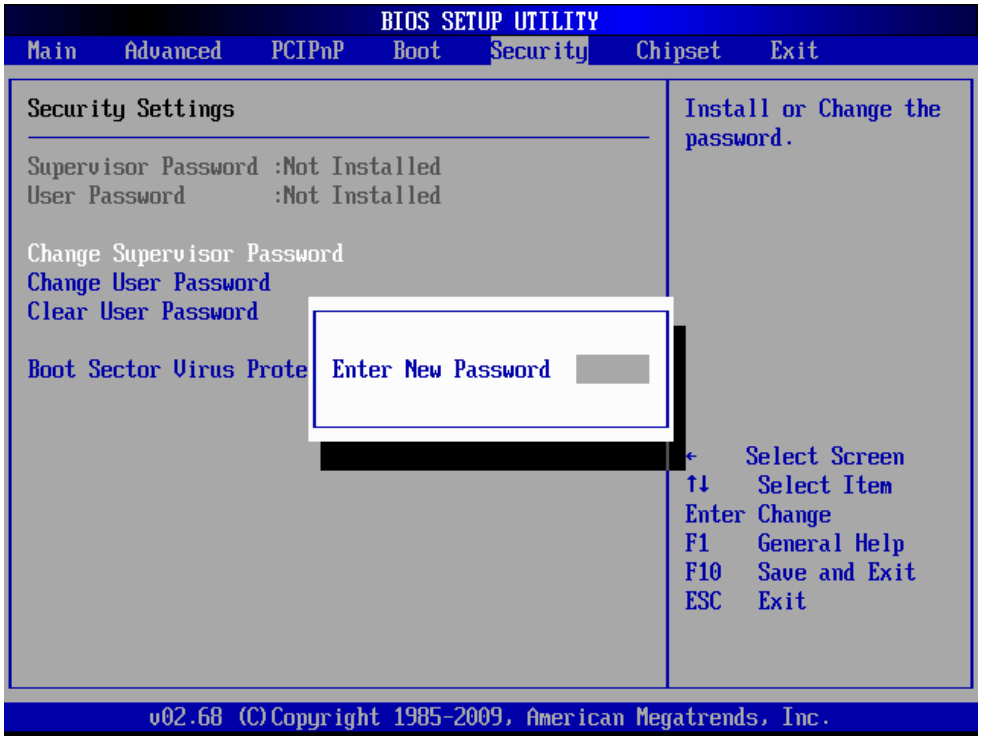
3.5.5 Security Settings

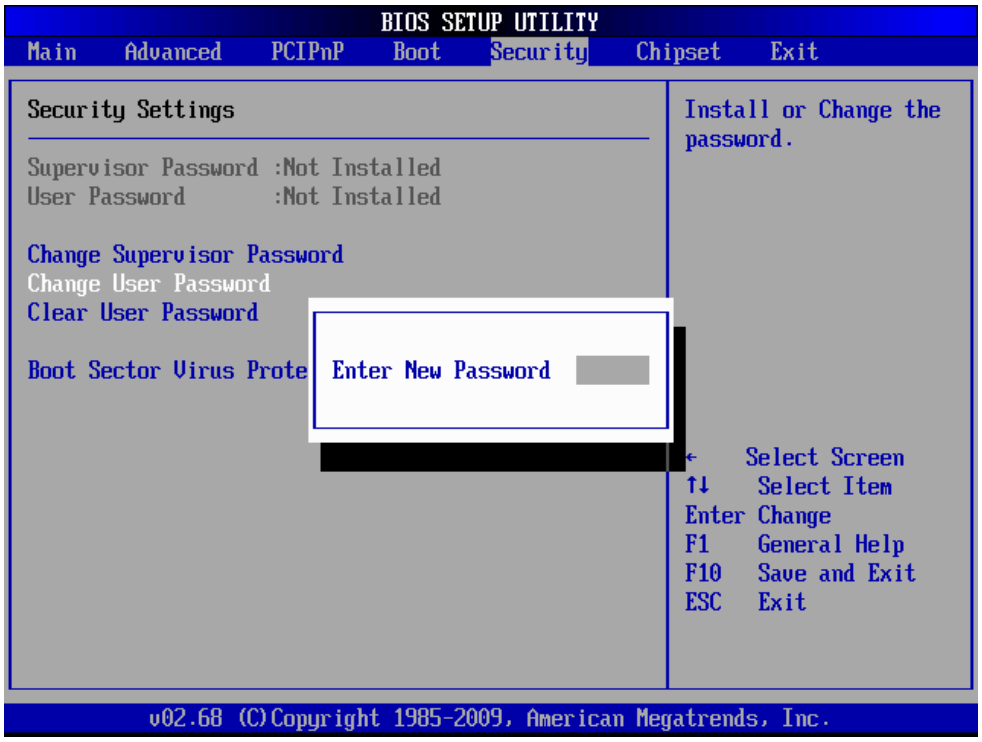
Use the Security menu to set system and user password.



3.5.5.1 Change Supervisor/ User Password

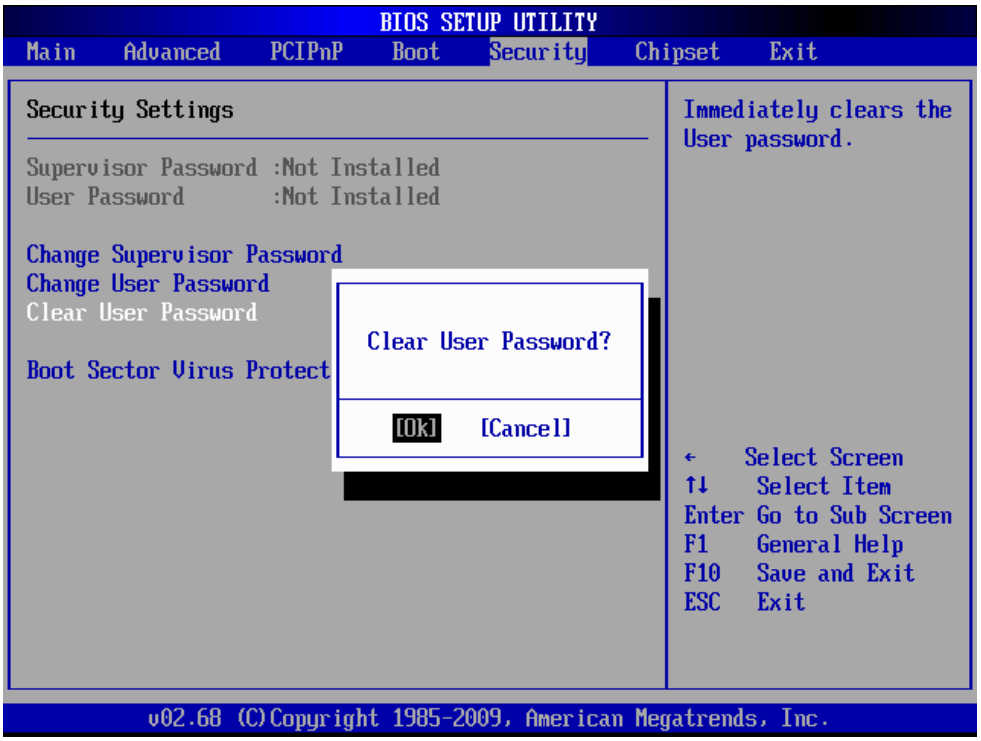
Provides for either installing or changing the password.





3.5.5.2 Clear User Password

Use the Clear User Password to clean a user password.



3.5.5.3 Boot Sector Virus Protection

The boot sector virus protection will warm if any program tries to write to the boot sector.

3.5.6 Advanced Chipset Settings

Use the chipset menu to access the Northbridge and Southbridge configuration menus.

BIOS SETUP UTILITY
Main Advanced PCIPnP Boot Security Chipset Exit
Advanced Chipset Settings
WARNING: Setting wrong values in below sections may cause system to malfunction.
North Bridge Configuration
South Bridge Configuration
Configure North Bridge features.
← Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
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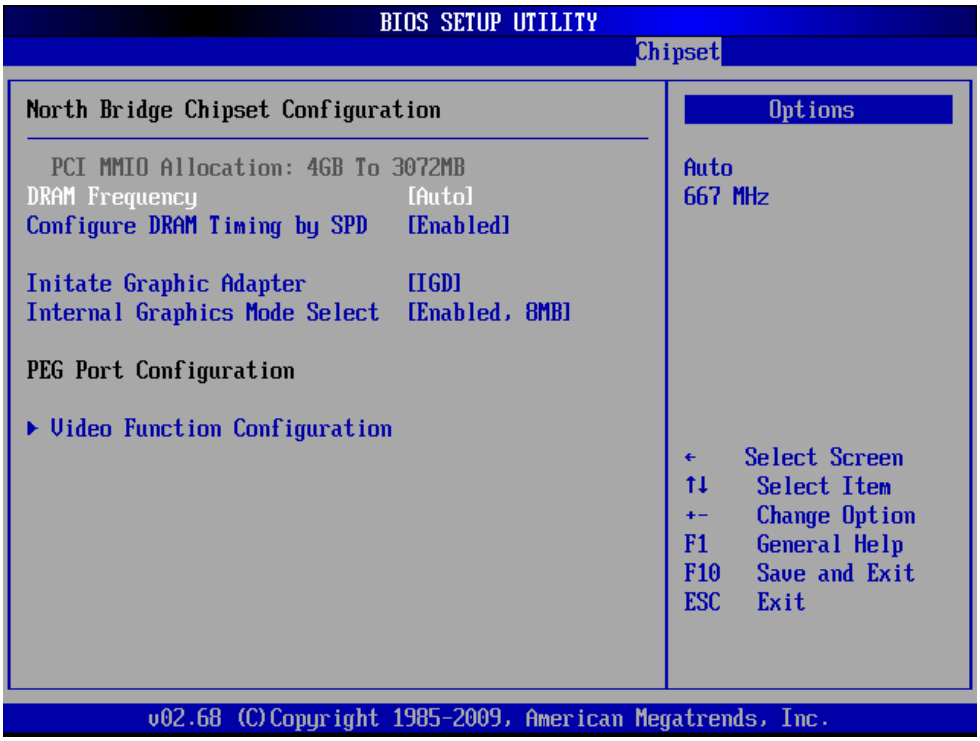
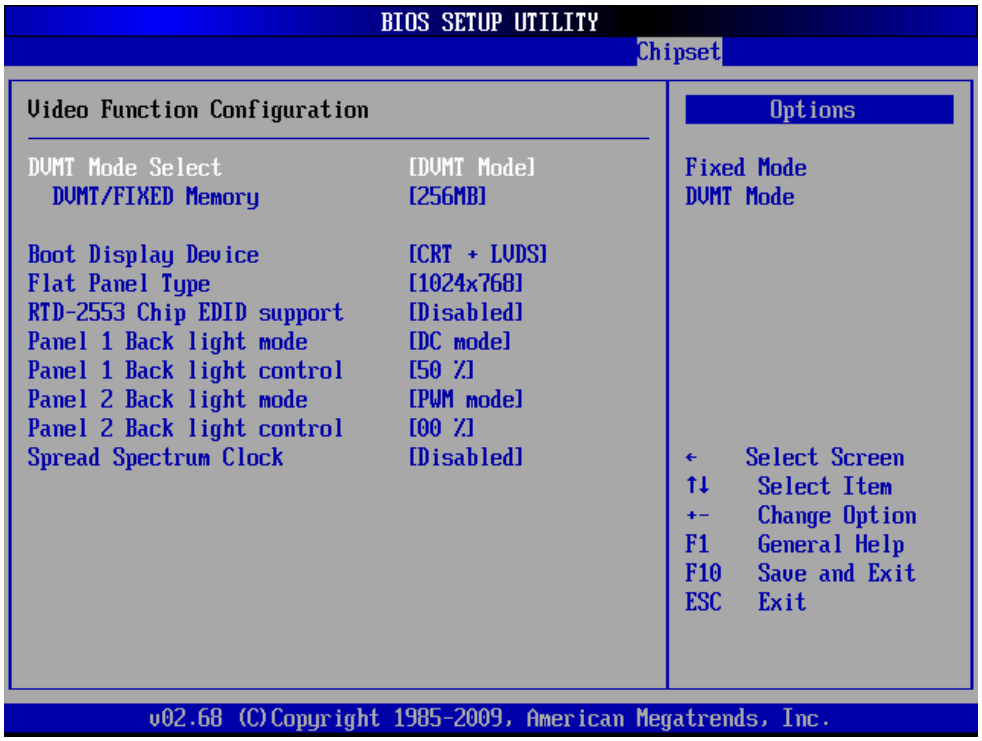
3.5.6.1 North Bridge Configuration



Item	Option	Description
DRAM Frequency	Auto, 667MHz	This item allows you to manually change DRAM frequency.
Configure DRAM Timing by SPD	Disabled, Enabled	This item allows you to enable or disable by DRAM SPD.
Initate Graphic Adapter	IGD, PEG/IGD	This item allows you to select which graphics controller to use as the primary boot device.
Internal Graphics Mode Select	Disabled, Enabled 32MB, Enabled 64MB, Enabled 128MB	This option determines the amount of system memory that can be used by the internal graphics device.
PEG Port Configuration	Disabled, Enabled	Use the PEG Port option to enable or disable the PCI Express port.

3.5.6.1.1 Video Function Configuration


BIOS SETUP UTILITY
Chipset
Video Function Configuration
DVMT Mode Select [DVMT Mode]
DVMT/FIXED Memory [256MB]
Boot Display Device [CRT + LVDS]
Flat Panel Type [1024x768]
RTD-2553 Chip EDID support [Disabled]
Panel 1 Back light mode [DC mode]
Panel 1 Back light control [50 %]
Panel 2 Back light mode [PWM mode]
Panel 2 Back light control [00 %]
Spread Spectrum Clock [Disabled]
Options
Fixed Mode
DVMT Mode
← Select Screen
↑↓ Select Item
+- Change Option
F1 General Help
F10 Save and Exit
ESC Exit
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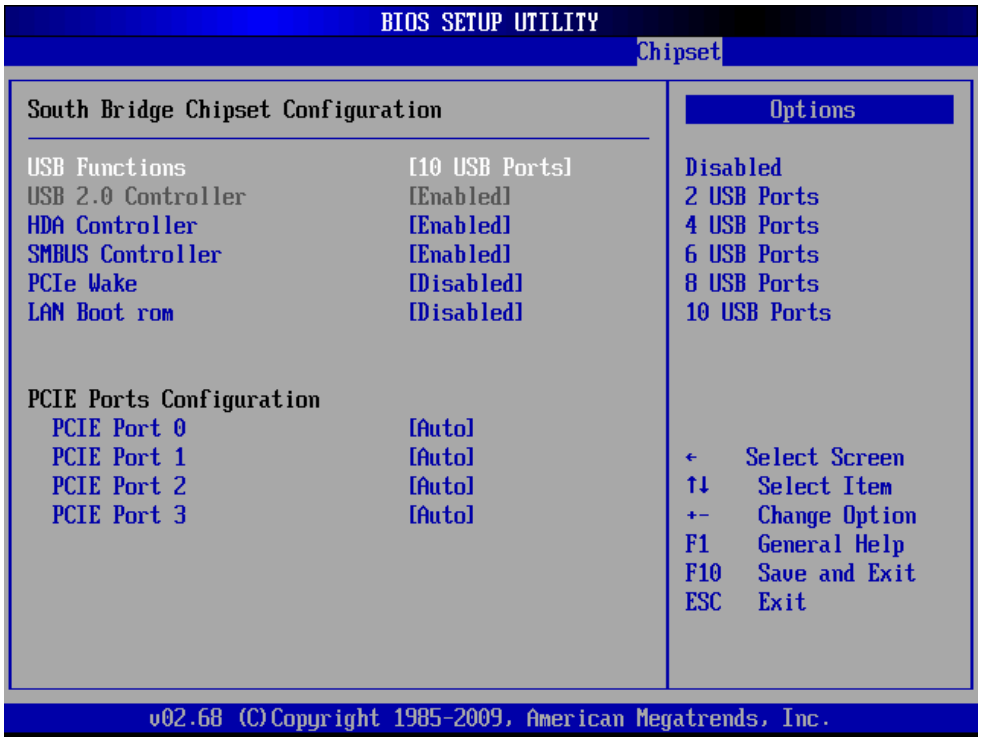
Item	Option	Description
DVMT Mode Select	Fixed Mode, DVMT Mode, Combo Mode	Displays the active system memory mode.
DVMT/ FIXED Memory	64MB, 128MB, Maximum DVMT	Specifies the amount of DVMT/ FIXED system memory to allocate for video memory.
Boot Display Device	VBIOS-Default, CRT, LVDS, CRT+LVDS	Select boot display device at post stage.

Flat Panel Type	640 x 480, 800 x 600, 1024 x 768, 1024 x 600, 1024 x 576, 800 x 480, 1280 x 720, 1280 x 768, 800 x 600, 1024 x 600, 1024 x 768, 1024 x 768, 1024 x 768, 1280 x 800, 1280 x 600, 1366 x 768	This item allows you to select which panel resolution you want.
RTD-2553 Chip EDID support	Disabled, Enabled	This item allows you to enable or disable RTD-2553 Chip EDID support.
Panel 1/ 2 Back light mode/ Control	PWM mode, DC mode	This item allows you to select Panel 1/ 2 backlight mode/ control.
Spread Spectrum Clock	Disabled, Enabled	This item allows you to enable or disable spread spectrum clock.

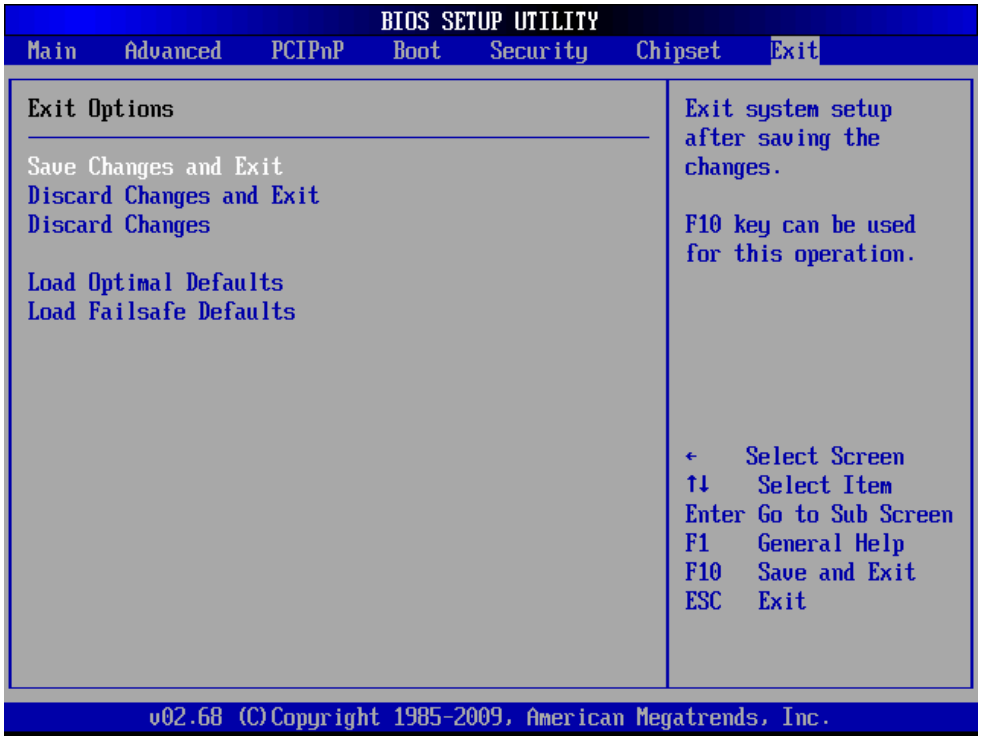
3.5.6.2 South Bridge Configuration



Item	Option	Description
USB Functions	Disables, 2/ 4/ 6/ 8/ 10 USB Ports	This option enables the number of USB ports desired or disables the USB function.
USB 2.0 Controller	Disabled, Enabled	This option is disabled by default.
HAD Controller	Disabled, Enabled	This option is used to enable the southbridge high definition audio controller.
SMBUS Controller	Disabled, Enabled	This option is enabled by default.
PCIe Wake	Disabled, Enabled	This section allows selecting PCIe wake mode.
LAN Boot rom	Disabled, Enabled	This section allows selecting LAN boot rom mode.
PCIE Port 0/ 1/ 2	Disabled, Enabled, Auto	This section allows selecting PCIE port 0/ 1/ 2 mode.

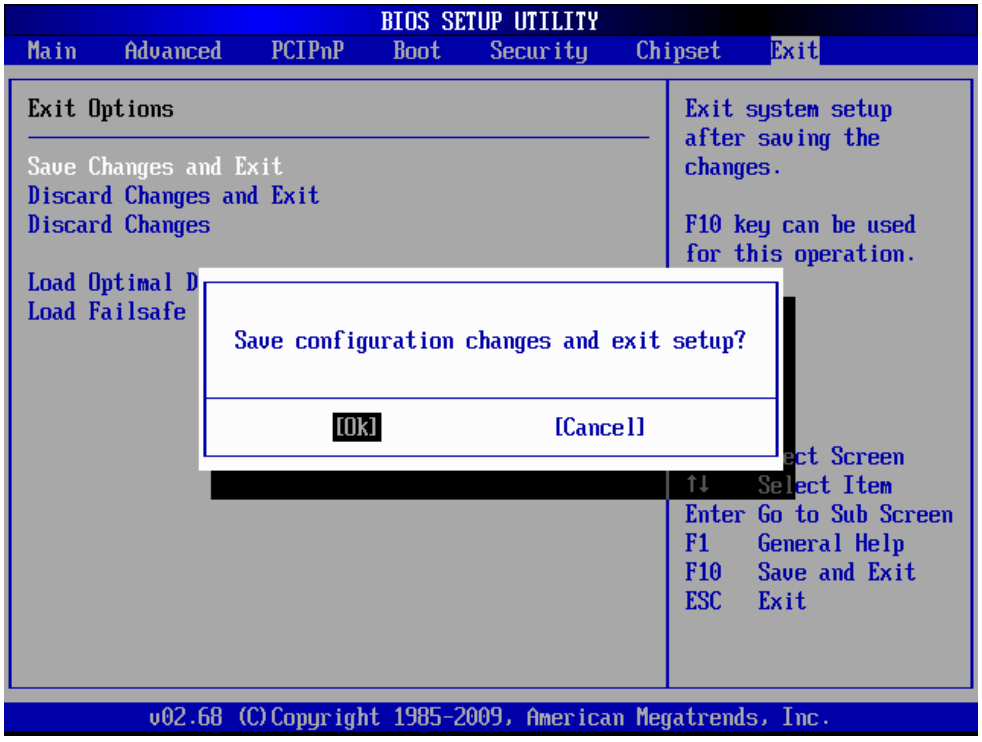
3.5.7 Exit Options

Use the Exit menu to load default BIOS values, optional failsafe values and to save configuration changes.


BIOS SETUP UTILITY
Main Advanced PCIPnP Boot Security Chipset Exit
Exit Options
Save Changes and Exit
Discard Changes and Exit
Discard Changes
Load Optimal Defaults
Load Failsafe Defaults
Exit system setup after saving the changes.
F10 key can be used for this operation.
← Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
v02.68 (C)Copyright 1985-2009, American Megatrends, Inc.

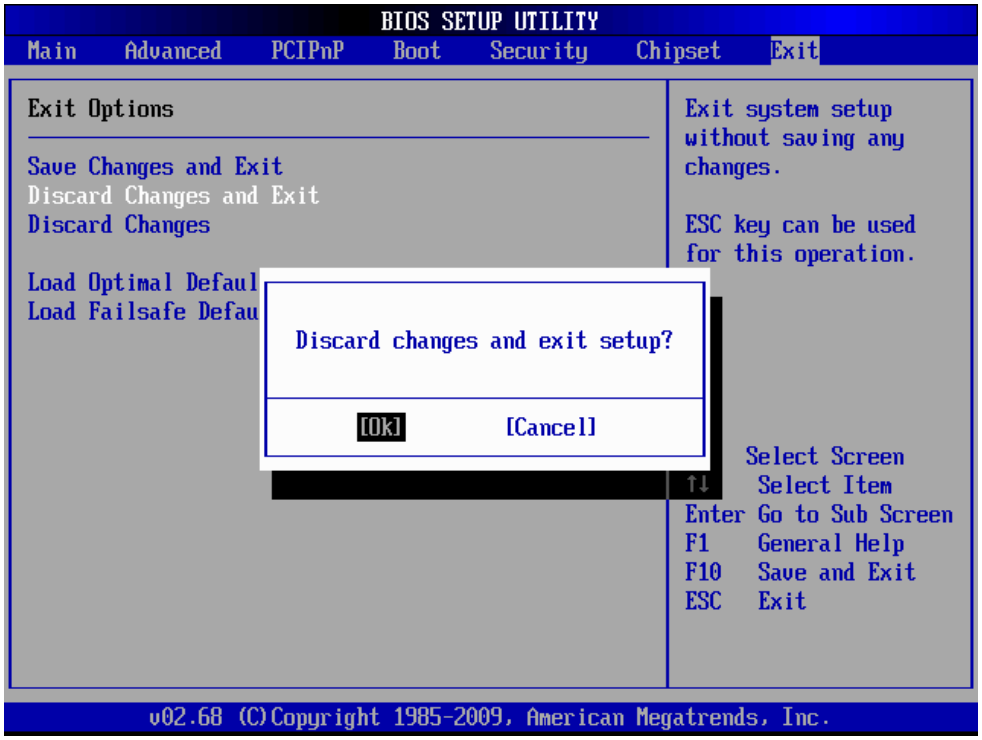
3.3.7.1 Save Changes and Exit

Use the save changes and reset option to save the changes made to the BIOS options and to exit the BIOS configuration setup program.



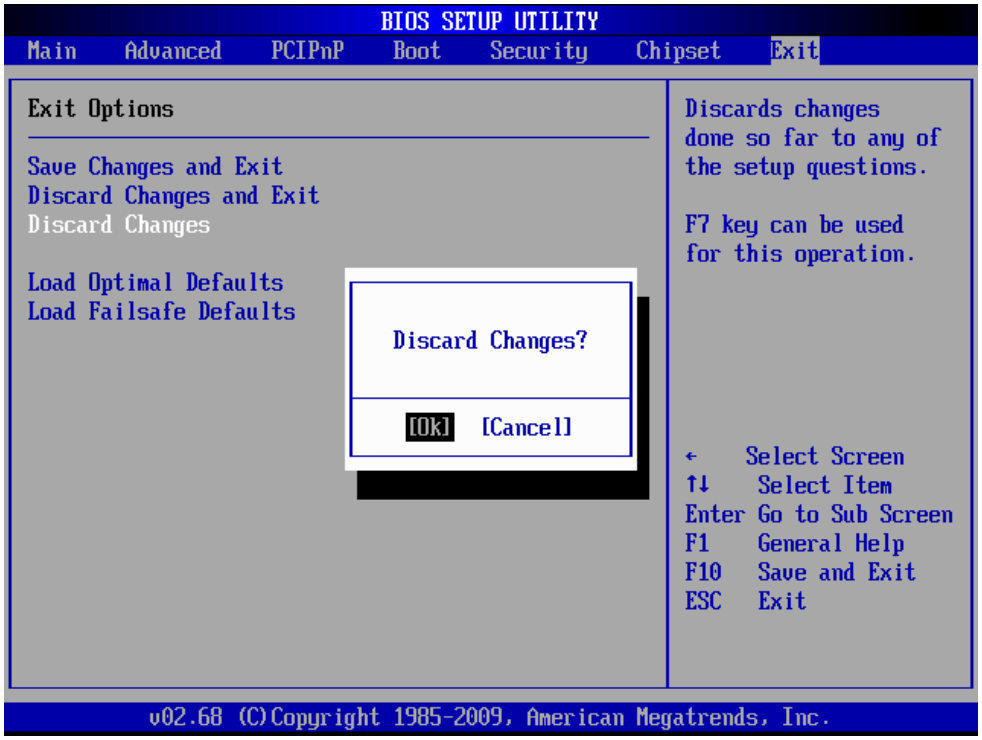
3.3.7.2 Discard Changes and Exit

Use the Discard changes and Exit option to exit the system without saving the changes made to the BIOS configuration setup program.



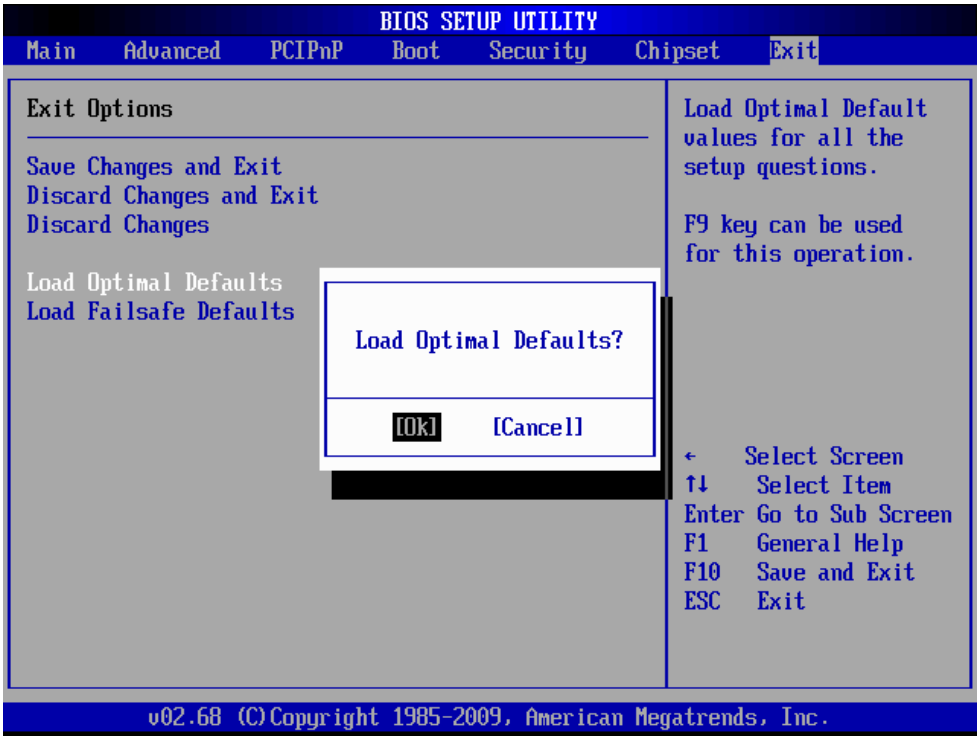
3.3.7.3 Discard Changes

Use the Discard Changes option to discard the changes and remain in the BIOS configuration setup program.



3.3.7.4 Load Optimal Defaults

Use the Load Optimal Defaults option to load the optimal default values for each of the parameters on the setup menus. F9 key can be used for this operation.


BIOS SETUP UTILITY
Main Advanced PCIPnP Boot Security Chipset Exit
Exit Options
Save Changes and Exit
Discard Changes and Exit
Discard Changes
Load Optimal Defaults
Load Failsafe Defaults
Load Optimal Defaults?
[Ok] [Cancel]
Load Optimal Default values for all the setup questions.
F9 key can be used for this operation.
← Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
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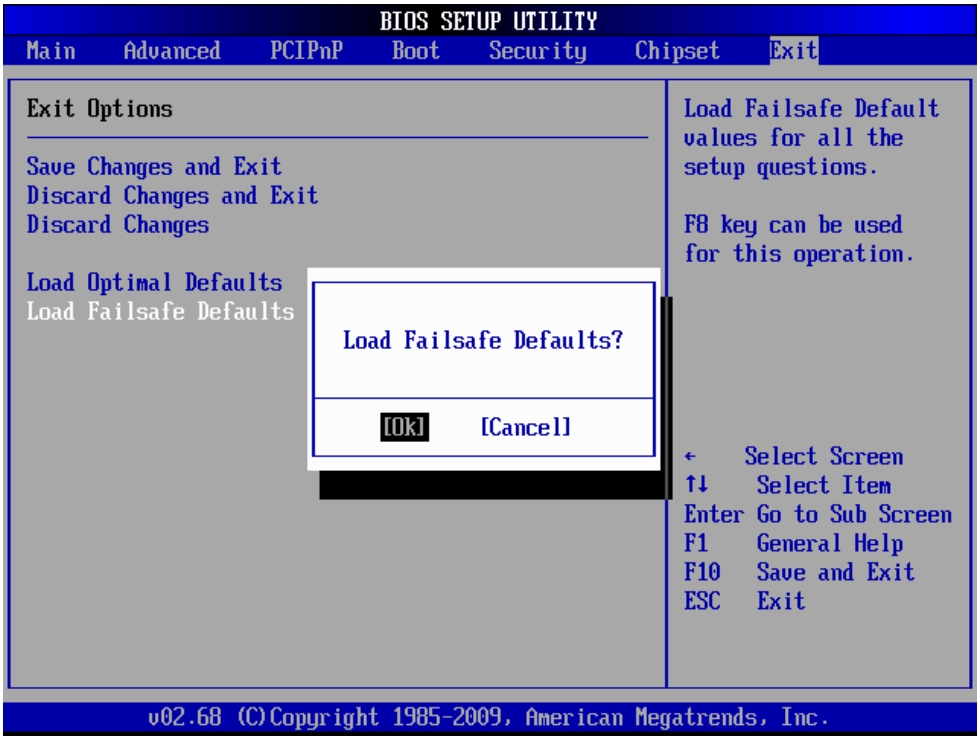
3.3.7.5 Load Failsafe Defaults

Use the Load Failsafe Defaults option to load failsafe default values for each of the parameters on the Setup menus. F8 key can be used for this operation.


BIOS SETUP UTILITY
Main Advanced PCIPnP Boot Security Chipset Exit
Exit Options
Save Changes and Exit
Discard Changes and Exit
Discard Changes
Load Optimal Defaults
Load Failsafe Defaults
Load Failsafe Defaults?
[Ok] [Cancel]
Load Failsafe Default values for all the setup questions.
F8 key can be used for this operation.
← Select Screen
↑↓ Select Item
Enter Go to Sub Screen
F1 General Help
F10 Save and Exit
ESC Exit
v02.68 (C)Copyright 1985-2009, American Megatrends, Inc.

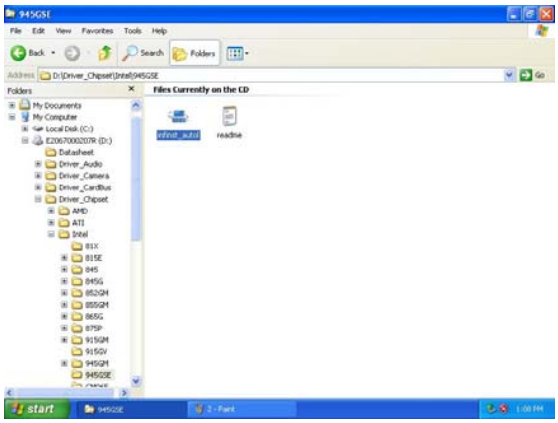
4. Drivers Installation

Note: Installation procedures and screen shots in this section are for your reference and may not be exactly the same as shown on your screen.

4.1 Install Chipset Driver (For Intel ICH8-M)

Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\Driver_Chipset\Intel\ICH8-M**.

Note: The installation procedures and screen shots in this section are based on Windows XP operation system. If the warning message appears while the installation process, click Continue to go on.



Step1. Locate 「\Driver_Chipset\Intel\ OM57\ \infinst_autol.exe」.

Intel® Chipset Device Software
Intel® Chipset Device Software
Welcome to the Setup Program
This setup program will install the Intel® Chipset Device Software onto this computer. It is strongly recommended that you exit all programs before continuing.
< Back
Next >
Cancel
Intel® Installation Framework

Step 2. Click **Next**.

Intel® Chipset Device Software
Intel® Chipset Device Software
License Agreement
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
INTEL SOFTWARE LICENSE AGREEMENT (Alpha / Beta, Organizational Use)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
The Software contains pre-release "alpha" or "beta" code, which may not be fully functional and which Intel Corporation ("Intel") may substantially modify in producing any "final"
< Back
Yes
No
Intel® Installation Framework

Step 3. Click **Yes**.

Intel® Chipset Device Software
Intel® Chipset Device Software
Readme File Information
Refer to the Readme file below to view the system requirements and installation information. Press the Page Down key to view the rest of the file.
* Product: Intel(R) Chipset Device Software
* Release: Beta
* Version: 9.1.1.1009
* Target Chipset#: Intel(R) 5 Series/3400 Series Chipse
* Date: March 09 2009
< Back
Next >
Cancel
Intel® Installation Framework

Step 4. Click **Next**.

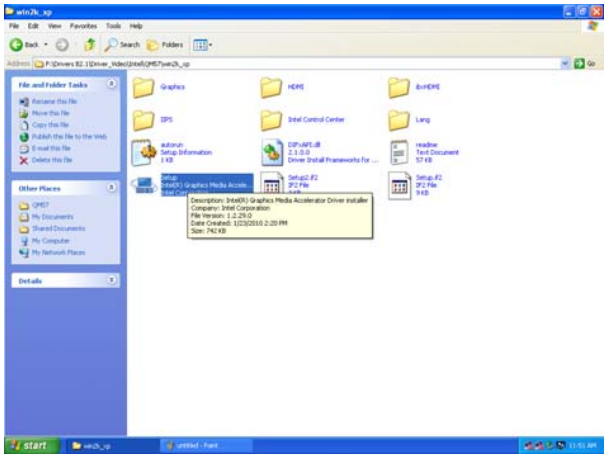
Intel® Chipset Device Software
Intel® Chipset Device Software
Setup Is Complete
You must restart this computer for the changes to take effect. Would you like to restart the computer now?
Yes, I want to restart this computer now.
No, I will restart this computer later.
Click Finish, then remove any installation media from the drives.
Finish
Intel® Installation Framework

Step 5. Click **Finish** to complete setup.

4.2 Install Display Driver (For Intel Pineview)

Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\Driver_Video\Intel\Pineview**.

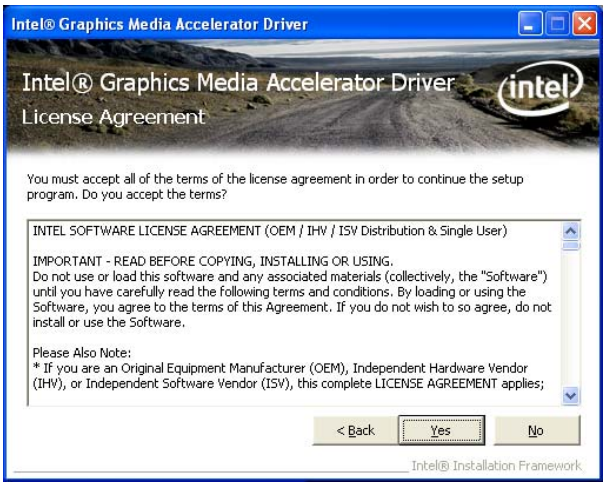
Note: The installation procedures and screen shots in this section are based on Windows XP operation system.



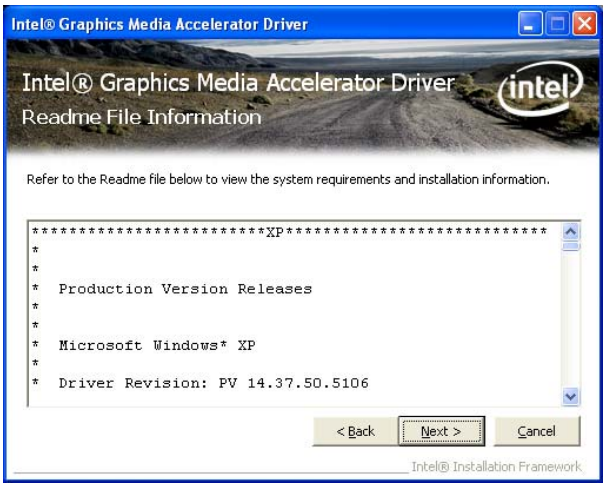
Step 1. Locate「Driver_Video\Intel\Pineview\Setup.exe」.

Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Welcome to the Setup Program
This setup program will install the Intel® Graphics Media Accelerator Driver onto this computer. It is strongly recommended that you exit all programs before continuing. Click Next to continue.
< Back
Next >
Cancel
Intel® Installation Framework

Step 2. Click **Next**.


Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
License Agreement
You must accept all of the terms of the license agreement in order to continue the setup program. Do you accept the terms?
INTEL SOFTWARE LICENSE AGREEMENT (OEM / IHV / ISV Distribution & Single User)
IMPORTANT - READ BEFORE COPYING, INSTALLING OR USING.
Do not use or load this software and any associated materials (collectively, the "Software") until you have carefully read the following terms and conditions. By loading or using the Software, you agree to the terms of this Agreement. If you do not wish to so agree, do not install or use the Software.
Please Also Note:
* If you are an Original Equipment Manufacturer (OEM), Independent Hardware Vendor (IHV), or Independent Software Vendor (ISV), this complete LICENSE AGREEMENT applies;
< Back
Yes
No
Intel® Installation Framework

Step 3. Click **Yes**.


Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Readme File Information
Refer to the Readme file below to view the system requirements and installation information.
**********XP**********
* Production Version Releases
* Microsoft Windows* XP
* Driver Revision: PV 14.37.50.5106
< Back
Next >
Cancel
Intel® Installation Framework

Step 4. Click **Next**.

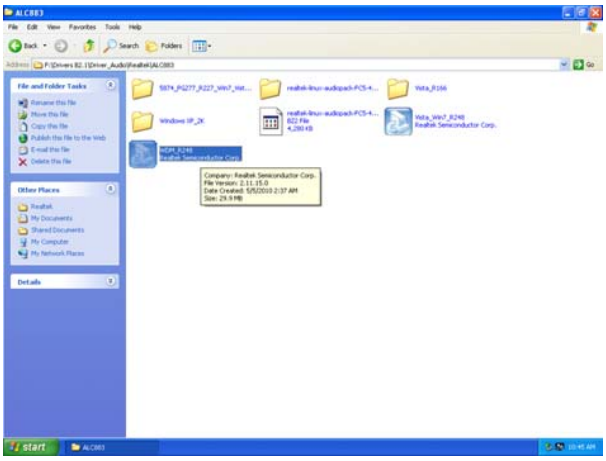
Intel® Graphics Media Accelerator Driver
Intel® Graphics Media Accelerator Driver
Setup Is Complete
You must restart this computer for the changes to take effect. Would you like to restart the computer now?
Yes, I want to restart this computer now.
No, I will restart this computer later.
Click Finish, then remove any installation media from the drives.
Finish
Intel® Installation Framework

Step 5. Click **Finish** to complete setup.

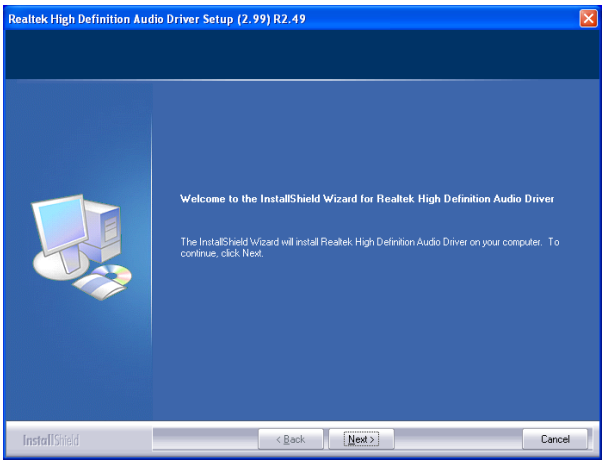
4.3 Install Audio Driver (For Realtek ALC888)

Insert the Supporting CD-ROM to CD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **\Driver_Audio\Realtek \ALC888.**

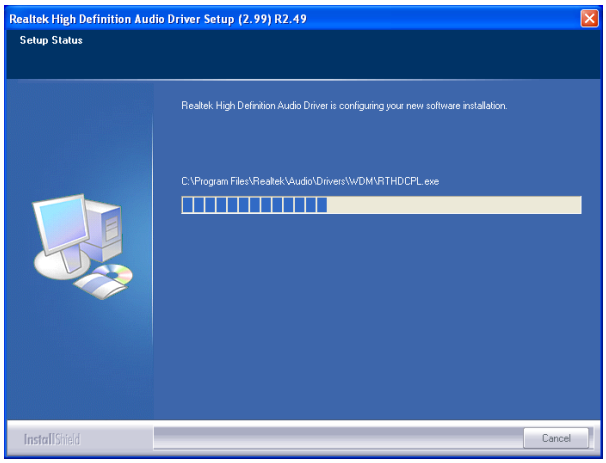
Note: The installation procedures and screen shots in this section are based on Windows 2000 operation system.



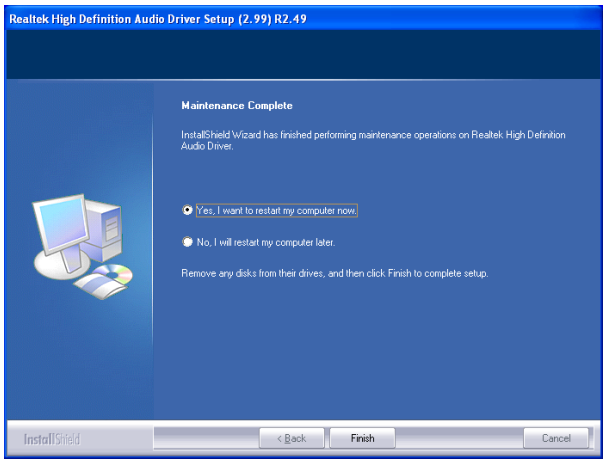
Step 1. Locate 「\Driver_Audio\Intel\ 6300ESB ALC888\setup.exe」.


Realtek High Definition Audio Driver Setup (2.99) R2.49
Welcome to the InstallShield Wizard for Realtek High Definition Audio Driver
The InstallShield Wizard will install Realtek High Definition Audio Driver on your computer. To continue, click Next.
InstallShield
< Back
Next >
Cancel

Step 2. Select **Next** to the next step.


Realtek High Definition Audio Driver Setup (2.99) R2.49
Setup Status
Realtek High Definition Audio Driver is configuring your new software installation.
C:\Program Files\Realtek\Audio\Drivers\WDM\RTHDCPL.exe
InstallShield
Cancel

Step 3. The program executes the Setup automatically.

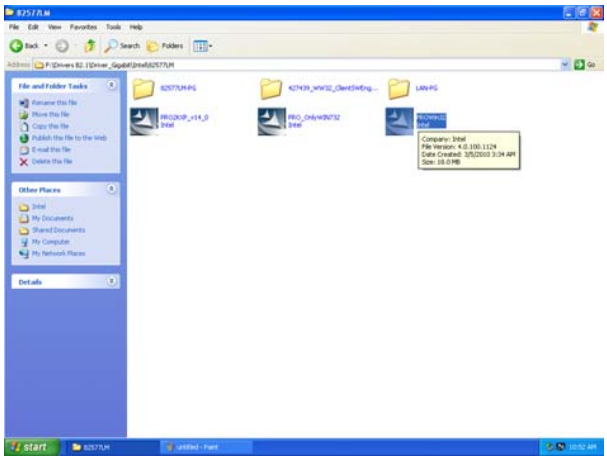

Realtek High Definition Audio Driver Setup (2.99) R2.49
Maintenance Complete
InstallShield Wizard has finished performing maintenance operations on Realtek High Definition Audio Driver.
Yes, I want to restart my computer now.
No, I will restart my computer later.
Remove any disks from their drives, and then click Finish to complete setup.
InstallShield
< Back
Finish
Cancel

Step 4. Click **Finish** to complete the setup.

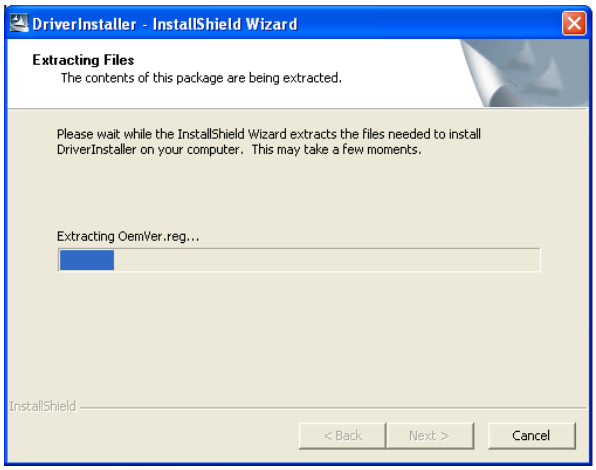
4.4 Install Ethernet Driver (For Intel 82574L)

Insert the Supporting DVD-ROM to DVD-ROM drive, and it should show the index page of Avalue's products automatically. If not, locate Index.htm and choose the product from the menu left, or link to **D:\Driver_Gigabit\Intel\ 82574L**.

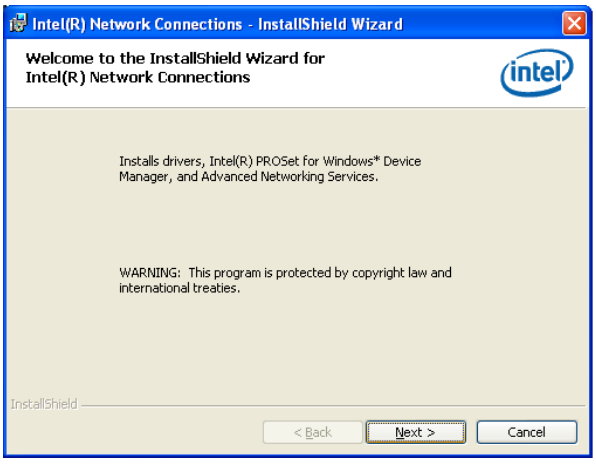
Note: The installation procedures and screen shots in this section are based on Windows XP operation system.



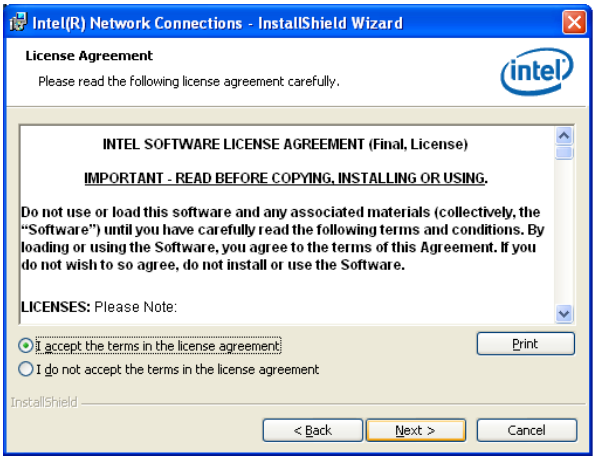
Step 1. Locate 「\Driver_Gigabit\Intel\ 82574L」and choose your system OS.


DriverInstaller - InstallShield Wizard
Extracting Files
The contents of this package are being extracted.
Please wait while the InstallShield Wizard extracts the files needed to install DriverInstaller on your computer. This may take a few moments.
Extracting OemVer.reg...
InstallShield
< Back
Next >
Cancel

Step 2. Click **Next**.


Intel(R) Network Connections - InstallShield Wizard
Welcome to the InstallShield Wizard for Intel(R) Network Connections
Installs drivers, Intel(R) PROSet for Windows* Device Manager, and Advanced Networking Services.
WARNING: This program is protected by copyright law and international treaties.
InstallShield
< Back
Next >
Cancel

Step 3. Click **Next** to run the installation.


Intel(R) Network Connections - InstallShield Wizard
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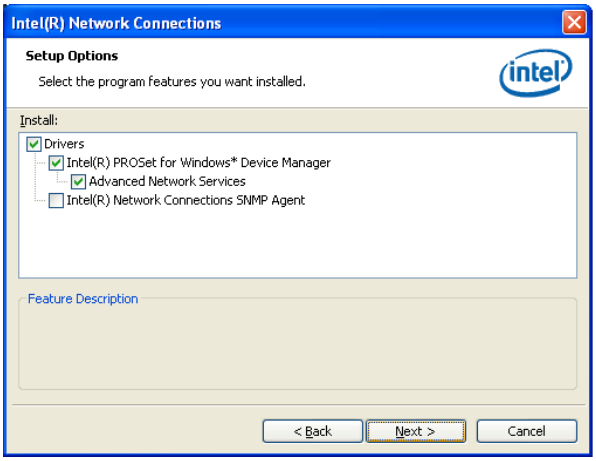
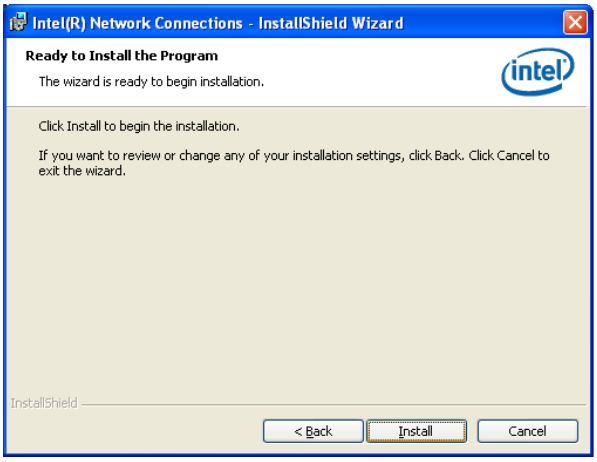
Print
InstallShield
< Back
Next >
Cancel

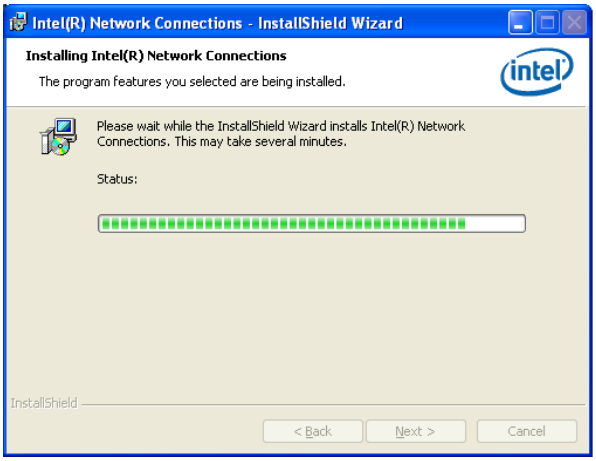
Step 4. Click **Accept** to continue.



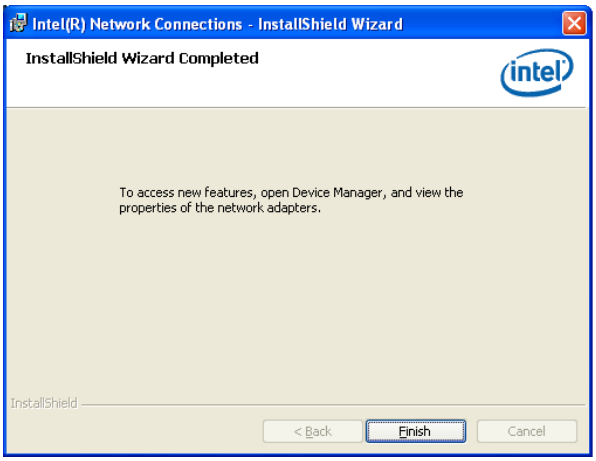
Step 5. Click **Next**.


Intel(R) Network Connections - InstallShield Wizard
Ready to Install the Program
The wizard is ready to begin installation.
Click Install to begin the installation.
If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
InstallShield
< Back
Install
Cancel

Step 5. Click **Install** to next step.

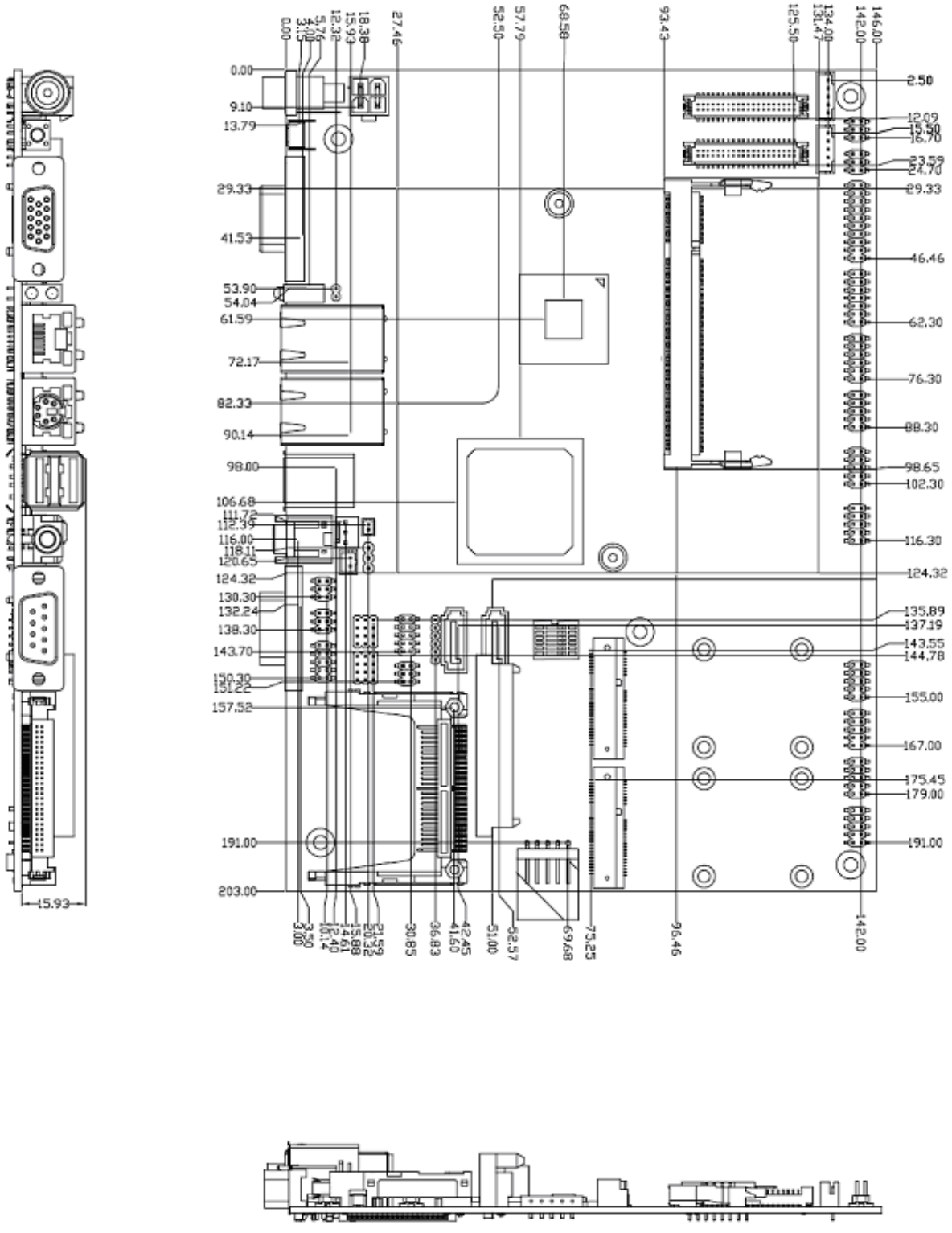

Intel(R) Network Connections - InstallShield Wizard
Installing Intel(R) Network Connections
The program features you selected are being installed.
Please wait while the InstallShield Wizard installs Intel(R) Network Connections. This may take several minutes.
Status:
InstallShield
< Back
Next >
Cancel

Step 6. Click **Next** to next step.

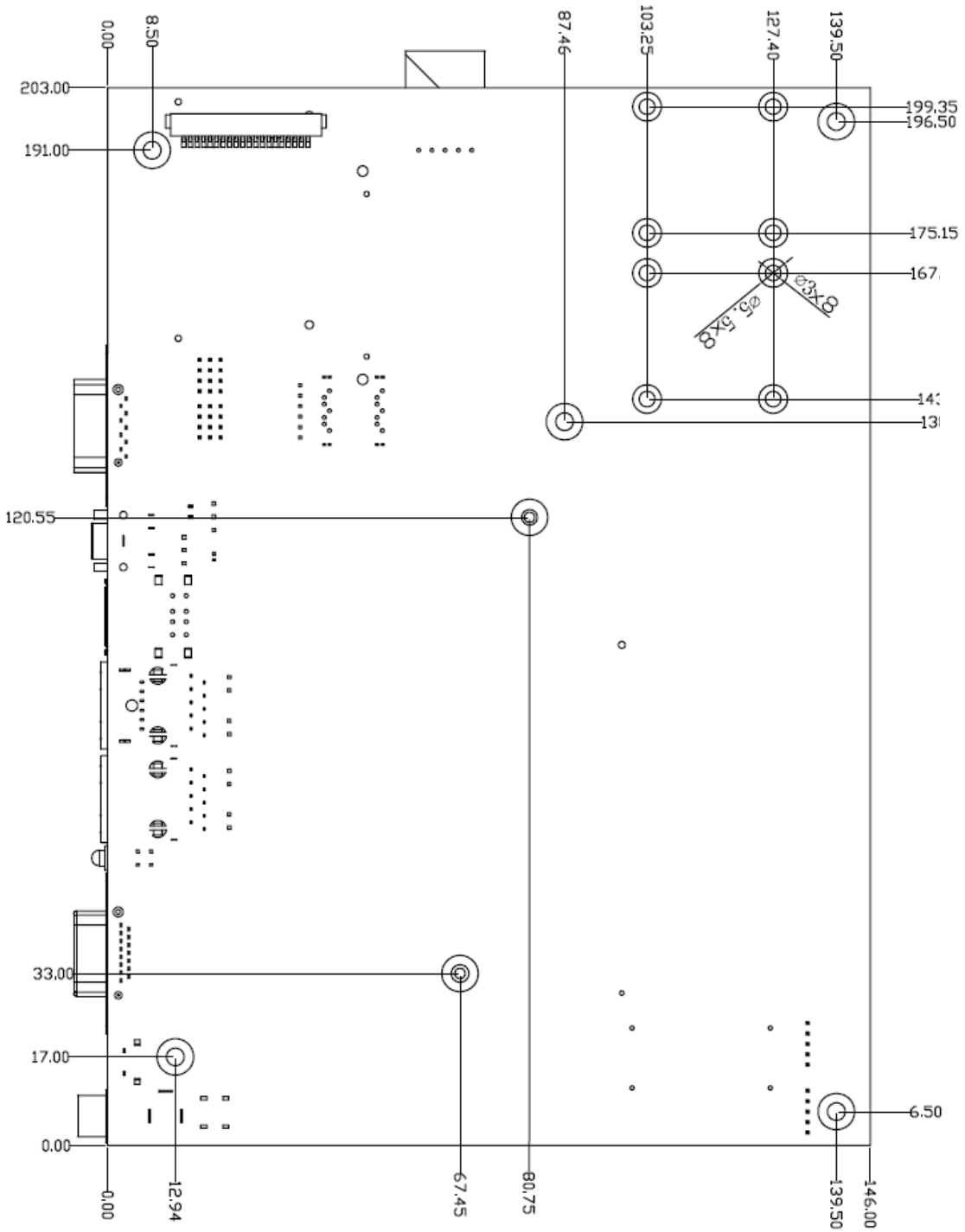

Intel(R) Network Connections - InstallShield Wizard
InstallShield Wizard Completed
To access new features, open Device Manager, and view the properties of the network adapters.
InstallShield
< Back
Finish
Cancel

Step 7. Click **Finish** to complete the setup.

5. Mechanical Drawing


0.00
9.10
13.79
29.33
41.53
53.90
54.04
61.59
72.17
82.33
90.14
98.00
106.68
111.72
112.39
116.00
118.11
120.65
124.32
130.30
132.24
138.30
143.70
150.30
151.22
157.52
191.00
203.00
15.93
27.46
52.50
57.79
68.58
93.43
125.50
134.00
131.47
142.00
146.00
2.50
12.09
15.50
16.70
23.59
24.70
29.33
46.46
62.30
76.30
88.30
98.65
102.30
116.30
124.32
135.89
137.19
143.55
144.78
155.00
167.00
175.45
179.00
191.00
142.00
96.46
75.25
69.68
52.57
51.00
42.45
41.60
36.83
30.85
3.50
3.00

Unit: mm


0.00
8.50
87.46
103.25
127.40
139.50
203.00
191.00
199.35
196.50
175.15
167
ø3x8
ø5.5x8
120.55
33.00
17.00
0.00
6.50
0.00
12.94
67.45
80.75
139.50
146.00

Unit: mm

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